* UMASS/AMHERST *
312066 0333 3407 1

LIBRARY
OF THE

ENSE PETIT PLACIDAM SVB LIBERTATE QVIETEM

MASSACHUSETTS
AGRICULTURAL
COLLEGE

SOUR[redacted] College funds
Per
1914:2

THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. LVI.—THIRD SERIES.

JULY TO DECEMBER, 1914.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
1914.

Per
G166
1914

INDEX OF CONTENTS.

JULY TO DECEMBER, 1914.

(For Special Headings see under Books; Certificates; Law Notes; Nursery Notes; Obituary; Plant Portraits; Plants, New; Scientific Committee; Societies; and Illustrations.)

A

Abbotsbury in June, 68
Abies balsamea var. hudsonica, 320
Abnormal flowering, 373
Acclimatisation of trees and shrubs, 208
Adair Place, purchased by Mr. W. H. Hartley, 389
Adventitious growths on Phaius Wallichii, 273
Aesculus Hippocastanum, introduction of, into France, 144
Agricultural colleges and the war, 134
Agricultural committee, 149; education conference, 262, 340
Agricultural returns, 1914, 134, 237
Agriculture at the British Association, 257
Ailanthus, characteristics of, 256
Albumen, the removal of, from seeds, 224
Aldenham House, Elstree, Peaches and Nectarines at, 240
Allen, Alderman Lemuel, appointment of, 340
Allgrove, Mr. J. C., 401
Allotment holders, suggestions for, 164
Aloë pretoriensis, 105
Alonsoa, frost-cut specimen of, 356
Alpine garden, the, 200, 320
Alpines at home, 170; for crevices of rockeries facing south, 123; on Mont Cenis, 170
Alstroemeria, cultivation of, 286
Amaryllis Belladonna maxima, 196
America, Antirrhinum rust in, 372; Apple crops in, 263; exotic Conifers in, 190; the supply of potash in, 326
American Gooseberry mildew, 300, 303, 319; spray for, 413
American seed, purchases of, in England, 238
American wheelbarrows in England, 58
Anemone coronaria and its varieties, 413
Anguloa Cliftonii, 381
Antirrhinum rust in America, 372
Antiseptics and soil micro-organisms, 386
Apiary, the, 53, 113, 131, 219
Apium nudiflorum, 43
Apple, a seedling, 386; "brown-rot" canker in, 85; canker, 401; crop in America, 263; curious growth on a grafted, 253; reversion in, 48; sawfly, 48; trains in the West, 372; trees on grass land, 180; versatile tree of, 368
Apples: Charles Ross, 237; Harry Pring, 396; Norfolk Beauty, 266, 275; Peacemaker, 95; Rev. W. Wilks, 225; cider, 76; colouring of, 328; disease of, 357; French varieties of, 164; fruit spot of, 357; naming of, 253, 299; selections of, 373, 389, 402, 415; storing of, 233, 366
Araucaria excelsa, 129
Arderne, H. M., the late, 256
Arnold arboretum, the, 25, 45; autumn tints at the, 280
Arsenate of lead as an insecticide, 207
Ashtead Park, Surrey, 274
Asphalting garden paths, 64
Aster batangensis, 186
Asters, single Chinese, 240
Aston, Mr. T. E., appointment of, 95
Athens, 271
Aubergine, the, 37
Auchinleck, Mr. G. G., appointment of, 163
Australia, British Association in, 262; notes from, 117; vegetation of, 133
Austrian expedition to China, 96

B

Bacterial rot of Celery, 73
Bacterised peat, experiments with, 12; grant for research in, 340
Baeria coronaria, 355
Baghdad, fruit culture at, 229
Balloch Park, Loch Lomond, purchase of, 58, 398
Bamboos, hardy, 351
Banding of fruit trees, 266, 299, 373
Banksian Rose, a large 95
Barbados fruit crops in relation to the war, 252
Barres, the arboretum at, 127
Basic slag for grass-land, 239
Bastard trenching, 250
Battalion of gardeners, proposal to form a, 371
Bauhinia purpurea, 142
Bee, the leaf-cutting, 137
Bees, the management of, 53, 113, 131, 219
Beetle, the shot borer, 184
Begonia Nancy, 297
Begonias suitable for bedding, 212
Belgian gardeners in England, help for, 296, 328
Belgian peasants and farm labour, 299
Belgium, and pomology, 220; exports from, 224; fruit industry in, 326; notes from, 329, 344, 360, 367, 383; seed Potato for, 252
Belgrave, Mr. W. N. C., appointment of, 237
Bell, Mr. A. R., appointment of, 163
Bennett, Reginald (*Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy*), 211
Biennials, hardy, 3, 29, 67
Birkinshaw, Mr. F., appointment of, 163
Bitter-pit in Apple, 357
Bivort, Alexandre, the Belgian pomologist, 363
Blackburn, Mr. G., presentation to, 134
Black Currant mite, 75
Black Poplars, the, 1, 46
Black-rot disease of Tomato, 114
Black spot in Roses, 333, 373
Blairgowrie fruit trade, the, 149
Blanjulus guttulatus, 172
Blatter, Ethelbert (*Flora of Aden*), 129
Bletchley Park, Buckinghamshire, 289
Bolton Chrysanthemum Society, 216
Bomb in a garden, 133
Books, Notices of: — Adventures among Wild Flowers (*John Trevena*), 402; A Guide to Rose Culture in the Bombay Presidency (*G. B. Patwardhan*), 321; A Handbook of Tropical Gardening and Planting with Special Reference to Ceylon (*H. F. MacMillan*), 272; A Manual of Weeds (*Ada E. Georgia*), 402; **B**ee Keeping for Profit (*W. S. Morley*), 21; British Rainfall, 1913, (*H. R. Mill*), 146; **C**ritical Revision of the Genus Eucalyptus (*J. H. Maiden*), 237; **D**ie Orchideen, 129; **F**arm Accounts (*C. S. Orwin*), 326; Flora of Aden (*Ethelbert Blatter*), 129; Flowering Plants of the Riviera (*H. Stuart Thompson*), 351; **H**ints on Planting Roses (*National Rose Society*), 390; **I**mpurities of Agricultural Seed (*S. T. Parkinson and G. Smith*), 145; **J**ournal and Proceedings of the Asiatic Society of Bengal, 145; **L**e Bon Jardinier, 128; Les Jardins de Plantes Vivaces (*E. Laumonnier*), 365; **M**aterials for a Flora of the Malayan Peninsula (*J. Sykes Gamble*), 145; Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy (*Reginald Bennett*), 211; My Garden in Summer (*E. A. Bowles*), 28; **P**erfumery and Essential Oil Record (*J. C. Umney*), 109; Plant Life in the British Isles, Vol. II. (*A. R. Horwood*), 146; Productive Orcharding (*Fred C. Sears*), 354; Publications received, 21, 37, 53, 138, 146, 166, 207, 218, 240, 248, 261, 281, 326, 340, 366, 402, 413; **R**evue Horticole, 149; Rural Improvement (*Frank A. Waugh*), 366; **S**ubmerged Forests (*Clement Reid*), 54; Sweet Peas for Profit: Cultivation—under Glass and Outdoors (*J. Harrison Dick*), 350; Sweet Pea Studies, IV., 50; **T**he Agricultural Journal of the Union of South Africa, 310; The Beginner's Garden Book (*Allen French*), 28; The Botanical Magazine, 117, 179, 238, 252, 323, 401; The Coco-nut (*E. B. Copeland*), 281; The Daffodil Year-Book, 306; The Flora of New Guinea, 402; The Garden Under Glass (*William F. Rowles*), 340, 398; The Genus Pinus (*George Russell Shaw*), 402; The Orchid Review, 57, 191; The Orchid World, 191; The Pig's Tale and Other Recitations (*Chas. T. Drury*), 95; The Scottish Gardener, 340; The Standard Cyclopedia of Horticulture, Vol. II. (*L. H. Bailey*), 207; Trees and Shrubs Hardy in the British Isles (*W. J. Bean*), 340; Trees: A Woodland Notebook (*Rt. Hon. Sir Herbert Maxwell*), 402; **W**ar Time and Peace in Holland (*J. W. Robertson Scott*), 366; **Z**oological Philosophy (*J. B. Lamarck*), 278
Bordeaux mixture and Woburn paste, 401
Botanic Gardens, Cambridge, the, 114
Botanising in China, 185, 213, 241, 258, 287, 318, 347
Botany at the British Association, 236
Bottling Peas, method of, 64
Bouckenooghe, M. Valere, news of, 388
Bouquet, the "epaulette," 372
Bowles, E. A. (*My Garden in Summer*), 28
Bowling greens in Edinburgh Parks, 259
Brackenhurst, seed-raising house at, 86
Brassia brachiata, 171
Brassicas, club root of, 118
Brasso-Cattleya Ilene, 158
Brasso-Laelio-Cattleya Gladius, 319
Bread made from bulbs, 201
British Association, agriculture at the, 257; botany at the, 236; in Australia, 262
Brittonastrum ionocalyx, 109
Broadway, Mr. W. E., appointment of, 326
Broccoli, old and new, 119, 240
Brown, Mr. N. E., retirement of, 163
Brown-rot canker of Apple, 85
Buddleia Colvilei, 127; B. nivea, 160
Bulb-garden, the, 232, 322, 366
Bulbs as meal for making bread, 201
Butcher, Mr. Gerald W., resignation of, 224

C

Calceolaria Cotswold Hybrid, 206
Calceolarias, herbaceous, 264
Caledonian railway station gardens, 266
Californian seeds, 227
Callistephus hortensis, 240
Cambridge Botanic Gardens, 114
Campanula Medium calycanthema, 3; C. pyramidalis, 3; C. velutina, 214
Campanulas, the culture of, 3
Camphor industry in Japan, 180
Canker, brown-rot, in Apple, 85
Cannell, the late Henry, 310
Capsidae, 48
Carbon dioxide, uses of, 34
Carnation-splitting affected by the weather, 190
Carnations, insect pest of, 172; Perpetual-flowering, 49
Carter, Mr. H. G., appointment of, 223
Cashew nuts, 263
Cattleya Alpha, 319; C. birex, 319; C. Mossiae, 236
Cauliflowers cultivated in Normandy, 163
Ceanothus, summer-flowering varieties of, 246
Cedrus Deodara, 119; C. D. var. nana, 320
Celastrus articulatus, 368
Celeriac, 129
Celery, bacterial rot of, 73
Celery crop, the, 298
Celsia cretica, 3
Cereus lividus, 58
Certificated Fruits and Vegetables: **A**pples: Harry Pring, 283, Winter Ribston, 404; **B**lackberry Himalayan Giant, 196; **F**rench Beans, Early Fortyfold, 153; Eldorado, 153; Magpie, 153; Perpetual, 153; **M**elons: Emerald Gem, 153; Hero of Lockinge, 164; Perfection, 153; Windsor Castle, 153

CERTIFICATED PLANTS: **A**maranthus Dr. Martin, 16; Amaryllis Belladonna speciosa purpurea, 196; Anguloa Cliftonii var. Rawdon, 284; Asters: Amellus Arethusa, 225; Amellus King George. 196; Cloudy Blue, 253; Comet, 197; Giant Comet Ruby, 197; Giant Comet The Bride, 197; Purple Prince, 253; The Prince, 197; Toison d'Or, 197; vimineus Lovely, 225; **B**egonia Mrs. Harry Barton, 281; Brasso-Cattleya Admiral Jellicoe var. Pink Pearl, 374; B.-C. Ilene, 60; B.-C. sulphurea, 359; **C**ampanula garganica W. H. Paine, 16; C. Norman Grove, 196; Carnations: Chelsea, 16; Délice, 376; Gordon Douglas, 16; Mrs. F. G. Bealing, 98; Nora West, 376; Pink Sensation, 341; Princess Dagmar, 253; Wivelsfield White, 281; Cattleya Adula var. Vale Bridge, 284; C. Ajax var. Orchidhurst, 282; C. Alcimeda var. Antiochus, 376; C. amabilis Fowler's var., 226; C. Antiope, 254; C. Armstrongii var. Cringlewood, 359; C. Astron, 99, 313; C. Empress Frederick alba, 284; C. Fabia Fire King, 359; C. General Smith-Dorrien, 284; C. gigas coloratum, 138; C. g. Walton Giant, 138; C. Hardyana rubens, 99; C. Irene, 15; C. iridescens var. aurifera, 195; C. labiata Andromache, 376; C. Mossiae splendens, 81; C. Peetersii alba West Point var., 359; C. Princess Royal, 254; C. Rhoda Fowler's var., 254; C. Sibyl var. Lord Kitchener, 195; C. S. var. Sir John French, 284; C. Sylvia var. atro-rubens, 359; C. Warscewiczii Meteor, 15; Celastrus articulatus, 403; Chrysanthemums: Abercorn Beauty, 300; Almirante, 300; Annie Walters, 342; Bronze Goacher, 300; Caledonia, 300; Captain Fox, 311, 330; Carrie, 300; Champ d'Or, 300; Chestnut Beauty, 391; Crimson Polly, 300; Delight, 255; Diana, 300; Dorothy, 284; Elfrida, 284; Ethel, 300; Evelyn, 300; Exmouth Yellow, 313; Fée Parisienne, 300; F. Wilson, 300; General French, 255; General Smith-Dorrien, 342; George Bowness, 300; Harrie, 300; Hestonia, 255; J. Bannister, 300; James Fraser, 375; James Stredwick, 281, 284; Jimmie, 300; La Négresse, 311; Leslie, 300; Lizzie Morris, 330; Lorraine, 300; Mabel Roberts, 300; Mme. Marie Masse, 300, Market White, 300; Martin Peed, 300; Mary Wild, 330; Meudon, 341; Miss Amy Poulton, 330; Miss Edith Webb, 255; Molly Godfrey, 342, 374; Mrs. J. Fielding (syn. Goacher's Terra Cotta), 300; Mrs. J. Gibson, 311; Mrs. Keith Luxford, 313; Mrs. W. Sydenham, 300; Nina Blick, 300; Norman Lachus, 330; Perle Chantillionaise, 300; Pluie d'Argent, 300; Polly, 300; Red Star, 330; R. Goodbourn, 330; Richmond, 391, 403; Roi des Blancs, 300; R. Pemberton, 300; Sir Tony, 341; Stella, 300; Thos. Beeson, 255; Tonkin, 300; Undaunted, 313; Wells's Scarlet, 300; W. Rigby, 281, 330; Coelia macrostachya, 284; Cypripedium Actaeus Ethel, 376; C. A. gigas, 284; C. Draco var. Cyclops, 359; C. Eileen, 376; C. Fairrii-tisii, 227; C. Greyi var. Ashlands, 81; C. Idina, 359; C. Nirvana, 313; C. Reginald Young var. Calliope, 376; C. Selene, 376; **D**ahlias: Barbara Purvis, 225; Canopus, 253; Deveron, 281; Eden, 196; Etoile Rose, 196; Kismet, 196; Lord Kitchener, 225; Loreley, 196; Lowfield Star, 225; Marguerite Phillips, 196; Melody, 225; Mrs. Edward Drury, 196; Neptune, 225; Rotifer, 196; Stella, 196; The Swan, 196; W. E. Peters, 225; White Star, 196; Worth Star, 196; **E**rica vagans St. Keverne, 98; **G**ladioli: Abeliard, 101; Armaganac, 101; Chicago White, 101; Eldorado, 59; Fire King, 101; Lord Alverstone, 196; Marie Thérèse, 101; Mrs. Atkinson, 16; Radiance, 16; White Giant, 101; **H**eleniums: autumnale Gartensonne, 267; a. grandiflorum, 267; a. superbum rubrum, 267; Riverton Gem, 267; Helianthus rigidus Rev. Woolley Dod, 267; H. multiflorus plenus, 267; Heliotropium Mrs. J. W. Lowther, 225; Hypericum laeve rubrum, 16; **I**ris Kaempferi Mikado, 16; **L**aelia pumila alba Orchid Dene var., 282; Laelio-Cattleya Aphrodite Our Queen, 15; L.-C. Britannia Mélanie, 254; L.-C. Canhamiana Rex var. Hassall's, 87; L.-C. Cicely, 81; L.-C. Fascinator var. Samson, 81; L.-C. Lady Oliphant, 282; L.-C. Martinettii var. Ruby, 81; L.-C. Miss Louisa Fowler, 99; L.-C. Mrs. Evelyn Norrie, 254; L.-C. Neleus var. Sunspot, 313; L.-C. Sir Douglas Haig, 404; L.-C. Thyone var. McBean's, 195; Lapageria alba delicata, 311; Lilium Biondii, 196; Lysinotus Willmottae, 17; **M**ichauxia Tchihatcheffii, 59; Miltonia Charlesworthii var. Beardwood, 81; M. Sanderae var. Enchantress, 15; M. vexillaria illustris, 15; M. v. Rev. W. Wilks, 60; **N**emesia, Marsden Jones's dark-flowered strain, 59; **O**dontioda Brewii Merl Dene, 138; O. B. Rann Lea, 81; Odontoglossum Christopher Guest, 81; O. crispum Catherine Oakshott, 81; O. c. Hololeucum, 376; O. c. Millie, 342; O. c. Mrs. J. Helm, 376; O. Dorothy Arkle, 81; O. eximium Excelsior, 81; O. e. purpurescens, 138; O. e. Solum, 15; O. Hermes, 376; O. Invincible, 15; O. Irene, 313; O. Jane Leggatt, 81; O. Jeanette var. rubellum, 359; O. × Mrs. A. E. Thompson, 138; O. Noel, 359; O. × Peacock, 81; O. percultum King George, 60; O. × Waterloo, 81; O. Zulu, 376; Odontonia Charlesworthii, 60; O. Cleverleyana, 15; O. Magali Sander var. xanthotes, 282; Oncidium Leopoldianum, 99; **P**entstemons: Admiral Togo, 154; Aldenham Pride, 154; Alex. Wood, 154; Crimson Gem, 154; Fair to See, 154; Gay Garland, 154; James Douglas, 154; Jane Dieulafoy, 154; Lady Sybil, 154; Margarite Baden, 154; Mrs. A. C. Sweet, 154; Persimmon, 154; Phryne, 154; Rosamund, 154; Southgate Gem, 154; Sportsman, 154; Virgil, 154; Petunia Purple King, 98; Pileostegia viburnoides, 225; Poinsettia pulcherrima rosea, 403; Polystichum angulare var. plumosum, 311; **R**enanthera pulchella, 15; Roses: Augustus Hartmann, 38; Butterfly, 38; Clytemnestra, 38; Dolly Varden, 38; Majestic, 38; Margaret Dickson Hamill, 38; Mrs. Arthur Bide, 38; Mrs. Bertram Walker, 38; Mrs. Maud Dawson, 38; Pemberton's White Rambler, 38; Waltham Scarlet, 16; **S**alvia Greggii, 225; Sophro-Cattleya Pearle, 376; S.-C. November, 342; Sophro-Laelia Felicia Fowler's var., 312; Sweet Peas: Fiery Cross, 78; Jean Ireland, 78; Mrs. Hugh Wormald, 16; Royal Purple, 78; The President, 16; **V**uylstekeara insignis, 15
Chamberlain, the late Joseph, and Kew, 247, 309, 340
Chatsworth in 1844, 326
Cheal, Joseph, awarded the Victoria Medal of Honour, 372
Cheimatobia brumata, the winter moth, 266, 299
Cheiranthus linifolius, 186, 207
Chemical manures and the maturing of fruit, 179
Children of London, gardens for the, 118
Chimonanthus fragrans, 217, 241
China Asters, single varieties of, 240
China, Austrian expedition to, 96; botanising in, 241; Mr. Reginald Farrer's explorations in, 185, 213, 258, 287, 318, 347; tree Paeonies in, 387
Chinese Vines, 213
Chino-Thibetan borderland, Cypripediums of the, 381
Chipp, Mr. T. F., appointment of, 163
Chrysanthemum conference, 372
Chysanthemums: at Edinburgh, 265; at Glasgow, 266; early varieties of, 265, 288, 304; incurved, at Nottingham, 384; in the L.C.C. parks, 251; varieties for market purposes, 394
Church Army's city gardens, 54
Cider Apples in the Cherbourg district, 76
Cirrhopetalum pulchrum, 158
Clare Island, tree growth on, 413
Clarke, Mr. Ernest, in Belgium, 355
Clayton, Henry J., memorial, 389
Clerodendron splendens, 34
Climatic records, the use of trees for, 190
Closon, M. Jules, welfare of, 370
Collectors, hints for, 173
Colman's, Sir Jeremiah, gift to Reigate, 95
Conference on Sweet Peas, 61
Conifers, dwarf varieties of, for the rock garden, 320; exotic, in America, 190; notes on, 305, 364, 411
Construction of greenhouses, 324
Convolvulus sabatius, 279
Cooke, Dr. M. C., the late, 356
Coombe Wood nursery, sale at, 251
Corky scab in Scotland, 182
Cotoneaster angustifolia, 352; C. bacillaris, 412; C. salicifolius, var. rugosa, 413
Covent Garden Market collection for relief funds, 252, 370
Crataegus, varieties of, 240
Crocus vallicola, 233
Crop, the effect of one, upon another, 74
Cross pollination in Apples, 152
Cryptomeria japonica var. Lobbii nana, 320
Crystal Palace as a hospital, 133
Cultivation of medicinal plants, 348, 373
Cupressus Goveniana, 364; C. Lawsoniana var. densa, 320; C. Macnabiana, 411; C. obtusa var. nana aurea, 320; C. o. var. nana densa, 320; C. pisifera var. nana, 320; C. torulosa, 305
Cuthbertson, Mr. Wm., awarded the Victoria Medal of Honour, 372
Cyanamide and superphosphate, the mixing of, 191
Cyaniding for insect destruction, 389; greenhouses, 66, 86
Cyclamen culture in Germany, 192
Cylindrosporium Pomi, a disease of Apples, 357
Cypripediums of the Chino-Thibetan borderland, 381
Cyprus, chemical manures for, 340

D

DAHLIA conference, 251
Dahlia society in U.S.A., proposed, 326
Dahlias and the Duffryn trials, 379, 403
Damson wine, recipe for, 270
Darwin Tulips, 111
Davenham grounds open to the public, 31
Dawkins, Mr. A., 401
Dawyck, trees and shrubs at, 125
Delphinium Emiliae, 30
Dendrobium Hookerianum, 200
Desfontainea spinosa, 160
Deutzia, varieties of, 198
Devon, notes from, 364
Dianthus barbatus, 3
Dick, J. Harrison (*Sweet Peas for Profit*), 350
Dickson and Robinson's vegetable show, 209
Digitalis ferruginea, 3; D. purpurea, 3
Diorama pendula, 310
Dioscorea, the genus, 187
Diploma in Horticulture, National, 30, 31, 372
Disease of Apples, 357
Dragon Fly, the, 97
Druery, Chas. T. (*The Pig's Tale and Other Recitations*), 95
Duffryn, South Wales, trials of Dahlias at, 379
Dulwich Chrysanthemum Show, 267
Dutch middlemen and the German seed trade, 296
Duthrie Park, Aberdeen, alterations at, 389

E

EARL OF STAIR, death of the, 38[illegible]
Echinops, 3; E. multiplex, 145
Edinburgh Chrysanthemum Show, 251, 340
Edinburgh, fruit and vegetable market at, 326, 340, 413; parks, bowling-greens in, 239
Elder tree trunk, a large, 281
Employment during winter on country estates, 240
Enemy, trading with the, 355
Eryngium Rothenbergii, 29
Essex farmers and wheat-growing, 117
Eucalyptus Globulus flowering in the open, 267, 328
Eumerus lunulatus (Narcissus fly), 6, 31, 58, 95
Euphorbia, reversion in, 230, 253
Evans, Mr. W. N., appointment of, 75
Events of the year, 412
Exotic Conifers in America, 190

F

FARM produce for the troops, 251, 291
Farmer, Mr. George, appointment of, 163
Farmers' horses for the war, 163
Farrer's, Mr. Reginald, explorations in China, 185, 213, 258, 287, 318, 347
Fastigiate Robinia, 58
Fatsia (Aralia) japonica, 368

JUN 2 1915

Fern frond, the, 217
Fertility of the soil, the, 370
Flies, the destruction of, 294
Florists' flowers, 49, 111, 265, 288, 304, 384
Flower garden, the management of the, 11, 32, 53, 72, 96, 112, 130, 146, 160, 174, 189, 202, 219, 234, 249, 261, 277, 292, 307, 322, 337, 353, 368, 384, 399, 416
Flowering, abnormal, 373, 389
Flowers, in season, 134, 253, 279, 340, 413; postal transit of, 5; preservation of, 193, 413
Food, home-grown, 163
Food supplies, care of, 114, 132, 133, 137, 149, 163; export of, 388
Foreign correspondence, 201, 329, 344, 360, 367, 383
Forestry, conference on, 37, 76, 120; official report on State, 108
Forrest, Mr. George, return of, from China, 387
France, food supplies in, 149; in 1870, 288; Mistleto in, 3; notes from, 273
Franco-German frontier, news from a nursery on the, 201
Fremontia californica, 382
French, Allen (*The Beginner's Garden Book*), 28
French, crops, 224; fruit syndicate, a, 114
"French" garden, the, 11, 73, 131, 161, 175, 189, 235, 284, 323, 369
French harvests, 149; horticulture, notes on, 3, 107, 126, 144; page, 329, 344, 360, 367, 383, 397, 414; varieties of Apple and Plum, 164
Freylinia cestroides, 390
Frost and sap-density, 386
Fruit crops, in Holland, 14; in New Hampshire and Maine, 297; remarks on the condition of the, 87, 94, 109, 135, 152, 166, 181, 193
Fruit culture at Baghdad, 229
Fruits: drying of, 164; maturing of, affected by chemical manures, 179; of the double-flowered Peach, 193, 239, 253, 267; packing, awards for, 98; plentiful supplies of, 193; preserving and storing of, 105; recipes for preservation of, 134, 152, 165; register of, 275
Fruit trees, banding of, 266, 299, 373; pruning of, 382; the parts of, 395; treatment of, 245, 259
Fruits, cultivation of, under glass, 10, 32, 52, 72, 97, 112, 130, 146, 160, 174, 189, 202, 218, 234, 249, 261, 277, 292, 307, 322, 337, 352, 369, 385, 398, 416; history of cultivated, 363, 409; naming of, 281
Fuchsia excorticata, 83
Fungi, how saprophytic, may become parasites, 106

G

Gaillardia, morning and evening positions of, 165
Gamble, J. Sykes (*Materials for a Flora of the Malayan Peninsula*), 145
Gardeners as soldiers, 133
Gardeners' Company's gift to the Lord Mayor of London, 37
Gardeners in the Forces and their State insurance, 281
Gardeners' Royal Benevolent Institution, 37
Gardeners, young, 8, 31
Gardening, educational, 50
Gardens, for the children of London, 118; old and new, 373
Garlic, the eradication of wild, 294
Gas tar as a remedy for mealy bug on Vines, 341, 357
Gastrodia elata, infected by a fungus, 77
Gentiana septemfida var. lagodechiana, 232
German prisoners' camp at Longmoor, 355
German trade and the Dutch middleman, 296
Germans visit a French nursery, 236
Germany, Cyclamen culture in, 192; Hops and Potatos in, 57; seeds from, 224, 355
Germination of seeds in the fruit, 58, 98
Gilia aggregata and G. coronopifolia, 29
Gladiolus vitriacensis, 192
Glasgow, afforestation scheme at, 340; as a centre for the overseas fruit trade, 114; proposed Loch Lomond Park at, 58, 297, 398; public bowling-greens in, 266; public gardens, 182; rainfall at, 390; Sweet Peas in a park at, 306
Glasnevin, the rock garden at, 186
Glaucium leiocarpum, 29
Globularia incanescens, 69
Gloriosa Rothschildiana, 75
Glover, Mr. F., appointment of, 75
Gongora grossa, 117
Gooseberry mildew, 76; enquiry concerning, 300; the control of, 303
Government trading, 299
Grading and storage of Apples and Pears, 233
Graire, M. Henri, as an amateur horticulturist, 250
Grape Primavis Muscat, 58
Grass in the rockery, 30, 144
Grass-land treated with basic slag, 239
Greenhouses, construction of, 324; cyaniding of, 66, 86
Greenway, Devonshire, in autumn, 364
Green wood, 179
Gunnersbury House, Acton, 69
Gunpowder, wood used in the manufacture of, 401

H

Hamamelis vernalis, 239
Hambro, Sir Everard, awarded the "Lawrence" Medal, 386
Hampstead amateur gardeners, 148
Hardy flower border, the, 50
Hardy fruit garden, operations in the, 11, 33, 53, 73, 97, 113, 131, 147, 161, 174, 188, 203, 218, 235, 248, 261, 276, 292, 306, 323, 337, 353, 368, 385, 399, 417
Harrow, Mr. George, 401
Harrow, preparations at, for the food supply, 134
Hartley, Mr. J. E. T., appointment of, 237
Harvest, and the Labour Exchanges, 134; of wild fruits, 133; prospects for the, 134
Hawick, the season at, 151
Heal, Mr. John, 401
Hedysarum microcalyx, 29
Helianthus cucumerifolius, 59
Helichrysum bellidioides, 320
Herbaceous flowers from Hopetoun, 191
Heredity, 176
Hesperis matronalis, 29
Hessels, Mr. Theo., experiences of, in Antwerp, 264
Heston, early Chrysanthemums at, 288
Hippeastrums, the history and culture of, 145
Holboellia latifolia, 241; in Jamaica, 201
Holland, fruit crops in, 14, 114; Hyacinths from, 355; plant disease administration in, 141; produce market in, 387, 401; trade from, 149
Holland House Show, 15; supplementary awards at, 34
Holly hedge, transplanting a, 124
Holmes, Mr. E. M., 372
Hopetoun, hardy herbaceous flowers from, 191
Hop-picking, 149
Hops, in Germany, 57; experiments with, 297
Horticultural branch of the Board of Agriculture, annual report of, the, 326
Horticultural societies, an appeal to, 166
Horticulture, and the war, 166, 403; at the Vienna Centenary Exhibition, 1915, 54; evening classes in, 297; National diploma in, 30, 31, 372
Hoxton market holiday fund, 98
Huber, the late Dr. Jacques, 57
Hunnemannia, 29
Hyacinths from Holland, 355
Hybrid Orchids, 126, 272, 364
Hydrocyanic acid gas and its use in horticulture, 65

I

Ice fringes, 413
Impatiens Holstii, 310
Imports and exports of fruits and vegetables 1913, 148
India, Strawberries in, 263
Inheritance of acquired characters, 278, 280
Insect destruction by cyaniding, 389
Insect galls of Java, 179
Insect pests of Carnations, 172
Insecticidal value of liquid extract of Larkspur seed, 372
Insecticide, arsenate of lead as an, 207
International sympathy, 149
Inula acaulis, 246
Iris Boissieri × tingitana, 322; I. Histrio alba as a pot plant, 396; I. stylosa, 403; I. Urumovii, 272
Irises, notes on, 48; origin of some garden, 48
Italy, notes from Southern, 71
Ivy stems, severing of, 30
Ixiolirion, the cultivation of, 286

J

Jam-making, prices of, 133
Japan, camphor industry in, 180; Mr. Wilson's botanical explorations in, 308
Jarrett, Mr. J., appointment of, 163
Javanese insect galls, 179
Juniperus chinensis var. nana, 320; J. c. var. Pfitzeriana, 320; J. communis var. alpina, 320, J. Sabina var. procumbens, 320; J. S. var. prostrata, 320; J. S. var. tamariscifolia, 320; J. virginiana var. globosa, 320; J. v. var. Kosteriana, 320

K

Kauri, age and growth of the, 179
Kew Gardens, houses closed at, 328; notes from, 327; thunderstorms at, 76; Tulip tree at, 216
Kew Guild Roll of Honour, 401
King's Oak, Tilford, preservation of, 224
Kitchen garden, management of the, 10, 33, 52, 73, 97, 113, 131, 147, 161, 175, 189, 203, 219, 235, 248, 260, 277, 293, 307, 323, 337, 353, 369, 385, 399, 416
Kniphofia, the genus, 409
Kolkwitzia amabalis, 117
Kropotkin's, Prince, views on inherited variation in plants, 280

L

Lachenalias, the culture of, 186
Laelio-Cattleya Penarth, 143
Laet's, Mons. F. de, nursery near Antwerp, 388
Lamarck, J. B. (*Zoological Philosophy*), 278
Land, for agriculture, 257; reclamation of, and unemployment, 262; work on, as a cure for unemployment, 266, 328, 340
Larkspur seed, insecticidal value of liquid extract of, 372
Late Blight fungus, persistence in soil, 37
Laumonnier, E. (*Les Jardins de Plantes Vivaces*), 365
Lavender grown for profit, 84
"Lawrence Medal," award of the, 386
Law Notes.—**A**merican Gooseberry mildew prosecution, 63; Apple pulp in Raspberry jam, 23; **B**ankruptcy statistics, 197; **F**ailure of Plantoids, Limited, 155; **G**ardening contract dispute, 392; **N**ursery for women gardeners, 332; **S**tatutory small tenants and market gardening, 378
Lawn tennis grounds, treatment of, 3
Leaf-cutting bee, the, 137
Le Clerc, Mons. L. V. P., honour for, 149
Lefroy, Prof. A. Maxwell-, appointment of, 95
Lemoine, Mons. E., letter from, 295
Lemoine's nursery at Nancy, 201
Leuzea conifera, 50
Lewis, Mr. W., appointment of, 301
Lightning, effect of, on trees, 280
Lilium Harrisii, the forcing of, 394; L. Henryi, 232; L. nepalense, 117; L. Sargentae at Monreith, 180; L. sulphureum, 240; L. Wallichianum, 275
Lime juice and Orange oil in West Indies, 264
Linum maritimum and Glaucium leiocarpum, 207
Littonia modesta, 69
Liverpool, a new park for, 252
Loch Lomond, proposed public park at, 58, 297, 398
Loiseleuria procumbens alba, 8
London gardens, 76
London Gardens Guild, 98
London kitchen gardens, an appeal for help for, 224
London Scottish Regiment, horticultural members of the, 339
Longmoor, German prisoners' camp at, 355
Lorette system of pruning, 302, 378, 395
Louvre roof-garden, the, 273
Lunaria biennis, 29

M

MacMillan, H. F. (*A Handbook of Tropical Gardening and Planting, with Special Reference to Ceylon*), 272
Magnesia used to purify water, 191
Magnolia grandiflora ferruginea, 320
Manchester district, market gardening in the, 143
Manure, for Tomatos, 297; loss of weight of, in transport, 75; sulphur as a, 372
Manures, chemical, required in Cyprus, 340
Mapledurham, Oxfordshire, 334, 335

Market fruit garden, operations in the, 47, 86, 126, 169, 265, 298, 317, 366, 396
Market-gardening in the Manchester district, 143
Markham, the late Mrs. H., 95
Maron, Mons. Ch., 388
Marrows, hybrid, 298
Masdevallia curtipes, 143
Mawley, Mr. Edward, resignation of, 264
Mealy bug on vines, gas-tar as a remedy for, 341, 357
Meconopsis, 29
Medicinal plants, the cultivation of, 348, 373
Melons, a good crop of, 267
Metrosideros lucida, 31
Michauxia Tchihatcheffii, 67
Micro-organism of the soil and antiseptics, 386
Millipede, the spotted, 172
Miltonia spectabilis virginalis, 230; M. vexillaria, 200; M. v. Laelia Sander, 162
Mistleto in France, 3
Mite, the Black Currant, 75
Modern gardening, some aspects of, 4
Moles as pest destroyers, 224
Mont Cenis, alpines on, 170
Moon's effects on plants, the, 86, 193
Morayshire, tobacco-growing in, 14
Morning and evening positions of flowers, 165
Moth, the Diamond Black, 57
Myosotis, garden species of, 67

N

Naming, of Apples, 253, 299; of fruits, 281
Narcissus, early specimens of, 366
Narcissus fly, the lesser, 6, 31, 58, 95
Narcissus seeding, 58
National Diploma in Horticulture, 30, 31, 372
National Relief Fund, 148
National Rose Society's contribution to Queen Alexandra's Fund, 190, 205
National Rose Society's show, table decorations at the, 76
National Sweet Pea Society's trials, 224
Naturalisation of alien plants, 179
Nerine "Coral," 196
New Hampshire and Maine, fruit crops in, 297
Newry, flowers and fruit at, 202
New Zealand, alien plants naturalised in, 179
Nomenclature, German views on, 400, 415
Normandy, cultivation of Cauliflowers in, 163
Nowell, Mr. Edward, as musical composer, 326
Nursery, damage at a, 76; employees and the war, 133; starting a small flower, 140
Nurserymen and prisoners, 279

NURSERY NOTES:—**C**heal, J., and Sons, Crawley, 95; **H**illier and Sons, Winchester, 150; **S**ander and Sons, St. Albans, 364; **V**eitch, Robert, and Son, Exeter, 214
Nymphaea scutifolia, treatment of, 198

O

Oaklands, Wimbledon Park, 304
OBITUARY: **A**rderne, H. M., 256, 269; **B**eckett, C., 285; Bound, W., 346; Bradbury, Joseph, 104; **C**annell, Henry, 300; Chamberlain, Joseph, 42; Chapman, Samuel, 243; Cooke, Dr. M. C., 345; Coombs, James, 331; Cuthbert, George, 43, 63; Cypher, Frank, 243; **D**onaldson, Alexander, 346; **F**olkes, Henry, 43; **H**erd, W. A., 256; Horscroft, Samuel, 243; **I**ggulden, W., 243; **K**irkpatrick, Walter B., 269; **L**amb, Robert, 392; Latham, William Bradbury, 418; **M**ansfield, Thomas, 167; Maycock, G., 346; Miller, William, 315; **N**isbet, Richard, 378; **O**ubridge, Henry Robert, 167; **P**hippen, F., 285; **S**angwin, W., 43; Scouler, John, 197; **T**owerson, Thomas E., 269; **W**aland, John J., 408; Weismann, August, 361; White, Nelson B., 331
Odontioda Diana, 246; O. Flamingo, 284; O. Stella, 143
Odontoglossum aspidorhinum, 200; O. Uro-excellens, 246; O. Uro-Skinneri, culture of, 156
Odontonia Charlesworthii, 107; O. Cleverleyana, 86; O. Macnabiana Brackenhurst var., 126; O. Magali Sander var. xanthotes, 288
Oenothera biennis, 67; O. taraxaicifolia, 67
Oncidium lanceanum, 230; O. Leopoldianum, 246, 304
Oldham, Mr. C. H., appointment of, 237
Onopordon, 67
Ontario Rose Society, 57
Orchards, the digging of, 366
Orchid houses, the management of the, 10, 32, 52, 72, 96, 112, 130, 146, 160, 174, 188, 202, 219, 235, 249, 261, 277, 292, 306, 323, 336, 352, 368, 385, 399, 415
Orchid notes and gleanings, 86, 107, 126, 143, 158, 171, 200, 230, 246, 272, 288, 304, 319, 364, 381
Orchid hybridisation, lecture on, at Horticultural Club, 358
Orchids: at St. Albans, 364; at Rosslyn, Stamford Hill, 107; blue flowered varieties of, 270; hybrid, 126, 272, 364; new, 57; sales of, 264
Othonna, the genus, 27
Overseas fruit trade, Glasgow as a centre for the, 114
Oxfordshire, school-gardens competition in, 372

P

Paeonia lutea, 225
Paeonies in China, 387
Panama Pacific Exposition, planting at the, 372
Pancratium illyricum, 140, 165
Papaver orientale Perry's White, 132
Paris, flower trade in, 134
Parkinson, S. T. (*Impurities of Agricultural Seeds*), 145
Pathological Convention, proposed, 94, 338, 350
Patwardhan, G. B. (*A guide to Rose culture in the Bombay Presidency*), 321
Peach, fruiting of the double-flowered, 193, 239, 253, 267
Peaches: at Aldenham House, Elstree, 240; grown in the open, 30; large, 137, 152; split stones in, 44
Pear Glout Morceau, 279
Pears in Kent, 328
Peas, late varieties of, 202, 225, 241, 310, 373, 389, 415
Peat, experiments with bacterised, 12; grant for research in bacterised, 340
Pelargoniums forty years ago, 304; seventy years ago, 296
Perennials treated as biennials, 67
Perry and Sons' employees' outing, 134
Peru, customs formalities in, 401
Pest destroyers, the use of moles as, 224
Pests, protection against, 94
Phaius Wallichii with adventitious growths, 273
Philadelphus, varieties of, 198
Phytophthora infestans, 37; a Potato capable of resisting, 250
Picea ajanensis, 327; P. excelsa, 320
Pine, the Siberian yellow, 180
Pineapples in the Azores, effect of smoke on, 239
Pinus montana, 320; P. Strobus var. nana, 320; P. sylvestris var. globosa, 320
Pinwill, Capt. W. Stackhouse C., awarded the Victoria Medal of Honour, 372
Pirie, Mr. William G., appointment of, 280
Pittosporum Dallii, 192
Pitwood, the scarcity of, 297
Plant disease administration in Holland and Denmark, 141
Plant growth, effects of radium on, 134

PLANT PORTRAITS:—**A**conitum rotundifolium, 239; Agave bracteosa, 252; **C**eratostigma Willmottianum, 401; Clematis Armandii, 401; Coelogyne brachyptera, 323; Cotoneaster Franchetii, 179; Crataegus pubescens stipulacea, 401; Cyrtosperma Johnstonii, 179; Cytisus pallidus, 252; **E**chinocactus minusculus, 323; Echinopanax horridus, 239; **G**ongora grossa, 117; **H**amamelis vernalis, 239; **I**ndigofera Kirilowii, 252; Ixora umbellata, 252; **K**niphofia, the genus, 410; Kolkwitzia amabilis, 117; **L**onicera fragrantissima, 323; **M**econopsis rudis, 179; **N**othofagus Cunninghamii, 323; **P**imelia ferruginea, 239; Pleione pogonioides, 401; Primula vinciflora, 117; P. vittata, 323; **R**osa corymbulosa, 117; R. setipoda, 179; **S**alvia longistyla, 401; **T**illandsia Benthamiana var. Andrieuxii, 239; Trichocaulon pictum, 252; Trollius chinensis, 117; **Z**ingiber Mioga, 179
Plant press at Wisley, 330
Plants by post, transit of, 296
PLANTS, NEW OR NOTEWORTHY.—Aloë pretoriensis, 105; **B**auhinea purpurea, 142; **I**ris Urumovii, 272; **O**thonna pachypoda, 27; **P**opulus generosa, 258; Primula angustidens, 142; **S**treptocarpus Blythinii, 258; Syringa Wilsonii, 27
Plants under glass, the cultivation of, 10, 33, 52, 72, 96, 112, 130, 147, 161, 175, 189, 203, 218, 234, 249, 261, 276, 293, 307, 322, 336, 352, 369, 384, 398, 417; inherited variation in, 280
Plasmodiophora brassicae, club root disease, 118
Plum, Jefferson, as a pot plant, 215; La Délicieuse, 138; summer pruning of the, 6, 152
Plums, French varieties of, 154
Poinsettia pulcherrima rosea, 190
Pollen, the preservation of, 37
Pollination, cross, in Apples, 126, 152
Pomologists, lives of the great, 363, 409
Pomology, Belgium's contribution to, 220
Poplars, American, 1; Black, 2, 46, 66
Populus deltoidea, 46; P. Eugenei, 47; P. generosa, 258; P. Henryana, 47; P. Lloydii, 66; P. marilandica, 66; P. nigra, 1; P. n. var. italica, 1; P. plantierensis, 2; P. regenerata, 47; P. robusta, 66; P. serotina, 47
Postal transit of flowers, 5, 296
Potash and the Highland Kelp in-industry, 372; in America, 326
Potash manures, 149, 263
Potato, a blight- and frost-resisting, 250, 280; competition at Edinburgh, 251; crop, 401; digger, a new, 37; growers and the war, 134; seed for Belgium, 252; spraying at Woburn, 74
Potatos: Arran Chief, 341, 357; Carisbrooke Castle, 327; Dunnottar Castle, 413; Warwick Castle, 413.
Potatos, affected with corky scab, 270; experiment in planting, 180; in Germany, 57; wart disease of, 237
"Pour nos amis français et belges," 329, 344, 360, 367, 383, 397, 414
Preservation of flowers, 193, 413; of outdoor timber, 70.
Preserving and storing of fruit, 105, 134
Primula angustidens, 142; P. kewensis, 415; P. obconica (double-flowered variety of), 181; P. Palinuri, the home of, 216; P. pseudo-capitata, 59; P. vinciflora, 117
Produce market in Holland, 387
Pruning fruit trees, 6, 152, 382
Psoralea bituminosa, 225
Publications received, 21, 37, 53, 138, 146, 166, 207, 218, 240, 248, 261, 281, 326, 366, 402
Puccinia antirrhini (Antirrhinum Rust), 372
Pyracantha angustifolia, 352
Pyrus floribunda, 141; P. vestita, 8
Pyruses, varieties of, 240

R

Rabbits as food for the poor, 133
Radium and plant growth, 134
Rainfall at Glasgow, 390
Recipe for Damson wine, 270; for preserving fruit, 134
Red House, Harrow-on-the-Hill, 240
Reichenbachian Herbarium, the, 57
Reid, C. (*Submerged Forests*), 54
Reigate, Sir Jeremiah Colman's gift to, 95
Restio subverticillatus, 119
Reversion, in Apple, 48; in Euphorbia, 253
Rheum Alexandrae, 58
Rhododendrons, for the San Francisco Exposition, 206; poisonous to animals, 124
Ribes Henryi, 29
Ringing trees, 320
Robinia Pseud-acacia, 58
Rockery, a natural, 200; grass in the, 30, 144
Roll of honour, gardeners', 326; Kew Guild, 401
Rome Convention, the, 94, 338, 350
Roof-garden at the Louvre, 273
Root crops, the, 372
Rosa corymbulosa, 117
Rosary, the, 70, 105, 186, 265, 289, 384
Rose peculiarities, some, 105
Rose season, beginning of the, 5
Rose Society of Ontario, 57
Roses, classification of, 6, 71; cure for black spot in, 333, 373; good and bad weather, 265; new, 54; past and present, 70; planting of, under glass, 187; repotting, 186; single-flowered climbing varieties of, 289; source of yellow, 7
Roses: American Pillar, 384; Fortune's Yellow, 206; Lady Waterlow, 37; Lyon, 137; Maréchal Niel (treatment of), 362; Mrs. George Shawyer, 326

Rosslyn, Stamford Hill, Orchids at, 107
Ross, Mr. Charles, 401
R.H.S.: Bulb show, 36, 164; Fruit Show, 133, 223, 262; Orchid Show in 1915, 54; the President and Council's appeal to members, 176; Tulip Nomenclature Committee 1914, 37
Rural Improvement (*Frank A. Waugh*), 366

S

Sansevieria Laurentii, 144
Sap-density and frost, 386
Saprophytic fungi as parasites, 106
Sawfly, Apple, 48
Saxifraga mutata, 67
Scent-making, 198
Scholarships in agricultural and veterinary science, 14
School gardening, 50

Scientific Committee: Abraxas grossulariata, 119; Aegle sepiaria, seedless fruits of, 357; Aesculus indica, seeds of, 417; Alstroemeria Hookeri, 100; Apple: a black, 267; damaged by frost, 417; in bird's nest, 417; with curious markings, 330; Apple tree pruning and its effect on growth, 390; Apples, seedless, 22; Araucaria imbricata attacked by fungus, 357; Aster. Dodder on, 100; Bay leaves injured by insects, 208; Bifurcation of leaves, 330; Black Currants, reversion in, 119; Black Fellow's Bread (Polyporous Mylittae), 390; Cabbage root, maggot in, 22; Calanthe × Branchii, 357, 391; Callipsyche aurantiaca, 390; Castelleya sp., 101; Cladrastis amurensis, 100; Claytonia sibirica, doubling in, 22; Cotyledons, enlargement of, 22; Dahlia stem eaten by wasps, 208; Dendrobium Toftii awarded a botanical certificate, 357; Dianthus barbatus, a spirally contorted specimen of, 390; Dodder on German Aster, 100; Erodium cicutarium, leaves of variegated, 390; Fasciation in Daisy, 22; Frost damage to Apple, 417; Gerbera with gall on veins, 208; Geum, Mrs. Bradshaw, 119; Gordon, the late Mr. G., 119; Harpagophytum, fruit of, 100; Hedycium Greenii with apical bulb, 417; Insects destroying Lettuce, 100; Isoloma with supernumerary petals, 390; Lecanium on Bay leaves, 208; Lysionotus Wilmottiae, 100; Maggot in Cabbage root, 22; Maize cobs, malformed, 357; Narcissus, diseases of, 100, 119; Narcissus fly, the lesser, 22; Nemesia with fringed flowers, 100; "Nettle leaf" or reversion in Black Currants, 119; Oak leaves, abnormal, 390; Origanum Marjorana, 330; Origanum species, 242; Orobanche Hederae, 100; Pancratium canariensis, 208; Papaver orientale × P. somniferum, 208; Parasite on Magpie Moth, 119; Parrisia rosaria, 119; Pea, seedless, 100; Pear × Quince, 330; Pelargonium hybrid, 208, 330, 417; Pinus Thunbergii, malformation in, 267; Plant, an unidentified, 390; Polyporus Mylittae (Black Fellow's Bread), 390; Primula floribunda, 417; Quercus Cerris, deeply lobed specimens of, 330; Reversion in Black Currants, 119; Rose buds injured by grubs, 119; Rose galls from the Alpes-Maritimes, 208; Salix hybrids, 330; Sawfly on Viola, 242; Saxifrage, a hybrid, 207; Seedless Pea, 100; Sempervivum Chrysanthemum, 267; Sisymbrium austriacum, a wild specimen of, 357; Snowdrop bulbs on stems, 390; Stenichneumon scutellata, 119; Sweet Peas, twin pods of, 242; Teasel, a malformed, 330; Vine leaves, warts on, 22; "Wild Almond" from the Cape, 22

Scotland, corky scab of Potato in, 182; notes from, 182, 266; Viola trials in, 172; weather in, 119
Scott, Mr. M. B., appointment of, 163
Sears, Fred. C. (*Productive Orcharding*), 354
Sedum sempervivoides, 67
Sedums, the misnaming of, 334
Seed, American purchases of, 238; preservation of, for shipment, 237
Seed growers, subsidies for, 371
Seeds, collection and storage of, 335; dead or alive, 34; from Germany, 224; from Holland, 251; germination of, 58, 98; removal of albumen from, 224
Semele androgyna, 241
Shot borer beetle, 184
Shrewsbury Show, orchard house trees at the, 57
Shrewsbury, Sweet Pea Show at, 121
Shrubberies, care of, 291
Siberian Yellow Pine, 180
Silene chloraefolia, 279; S. compacta, 67
Small-holders, technical instruction for, 237
Small-holdings, 188
Smith, G. (*Impurities of Agricultural Seeds*), 145
Smith, J. T., the late, 389
Smith, Mr. Joseph, gift to, 389
Smoke, effect of, on Pineapples, in the Azores, 239

Societies:—Aberdeen Chrys., 284; Ayrshire Sweet Pea and Rose, 122; Banbridge Hort. and Agri., 183; Barry Chrys., 343; Birkenhead Agricultural, 23; Birmingham Chrys., 342; Birmingham Hort., 79; Bishop's Waltham, 121; Bournemouth Hort., 357; British Gardeners' Association, annual meeting, 102; British Mycological, 343;; Burnley Hort., 37; Cardiff Hort., 82, 101; Cemetery Superintendents', 102; City of London Rose, 22; Coventry Chrys., 343; Croydon Chrys., 313; Croydon Hort., 23; Elgin Hort., 138; Elstree Hort., 65; Formby Hort., 102; Gardeners' Royal Benevolent Institution (Festival Dinner), 9; (Berkshire branch), 37; General Bulb Growers of Haarlem, 122; Gloucestershire Rose and Sweet Pea, 82; Highland and Agricultural, 138; Hornsey Chrys., 313; Horticultural Club, 14, 34 (Excursion to Hatfield House and Balls Park), 76, 309, 358; Horticultural Trades' Association (annual meeting), 208; Killarney Hort. and Industrial, 138; Lancaster Hort., 376; Leamington and County, 103, 119; Leicester Flower Show, 182; Linnean, 377; Liverpool Hort., 62, 343; Maidenhead Chrys., 314; Manchester and North of England Orchid, 81, 138, 227, 284, 314, 359, 376; Manchester Royal Botanic and Hort., 63; Midland Carnation and Picotee, 120; National Carnation and Picotee, 37, (Southern Section) 79; National Chrys., 227, 242, 255, 284, 313, 330, 342, 375, 391, (annual conference) 406; National Dahlia, 162, 268, 284, 375; National Gladiolus, 101; National Rose, 38, (annual meeting) 405; National Sweet Pea, 37, 77, 78, 242, (annual meeting) 267; Newark and District Hort., 154; North of England Hort., 83; People's Palace and East London Hort., 314; Perpetual-flowering Carnation, 61, 206, 376, (annual meeting), 391, 401; Reigate Rose and Sweet Pea, 63; Richmond Hort., 22; Royal Agricultural Shrewsbury Show, 41; Royal Hort. (Holland House Show), 15, 59, (Masters Memorial Lecture) 76, 98, 119, 153, 195, 208, 225, 242, 253, 267, 281, 300, 311, 330, 341, 357, 374, 390, 403, 417; Royal Hort. affiliated societies, 242; Royal Hort. of Aberdeen, 331; Royal Hort. of Ireland, 268; Royal Hort. of Victoria, 122; Royal Meteorological, 389; Royal Scottish Arboricultural, 154, 209, 407; Saltaire Rose, 81; Scottish Hort., 82, 154, 210, 268, 359; Shropshire Hort., 41; Smithfield Club, 391; Société Française d'Hort. de Londres, 63; Southampton Hort., 61, 101; Stevenage Chrys., 371; United Horticultural Benefit and Provident, 83, 154, 225, 314, 343; Ventnor Chrys., 330; Watford Hort., 101; Wolverhampton Show, 40, 119; Women's Agri. and Hort. International Union, 407; Woolton hort., 101.

Soil, fertility of the, 370; micro-organisms and antiseptics, 386; particles, distribution of, 74; sterilisation, 179
South-Eastern Agricultural College, Wye, 387
South Africa, notes from, 86
South African plants in autumn, 204
South Devon, flowers in, 231
Southend public parks and gardens, 157
Soya Bean as a vegetable, 224
Spider, red, 172
Spinach and its substitutes, 117, 151, 165
Stair, the late Earl of, 386
State insurance of gardeners in the Forces, 28
Sterilisation of soil, 179
Stomata, the distribution of, in Graminaceous seedlings, 192
Storage and grading of Apples and Pears, 233; of seeds, 335
Strawberry Mme. Henri Leduc, 275
Strawberry, pests of the, 118
Strawberries at Upton, Hampshire, 158; in India, 263
Streak disease of Sweet Pea, 124
Streptocarpus Banksii, 192; S. Blythinii, 258
Succulent plants, watering, 150
Sugar, a substitute for, 148
Sugar Beet, the culture of, 168
Sulphur as a fertiliser, 372
Sun, flowers that follow the, 165
Superphosphate and cyanamide, the mixing of, 191
Sutherlandia frutescens, 240
Sutton and Sons' annual excursion, 14.
Sutton, Mr. Leonard, elected mayor, 296
Sweet Pea Conference at the White City, 61
Sweet Peas, at Glasgow, 306; best varieties of, 51; exhibition, 7; "Simplicitas" trophy for, 134; streak disease of, 124; under glass, 140, 172
Sweet William, origin of, 241
Syringa Wilsonii, 27

T

Tea statistics, 372
Technical instruction for small holders, 237
Tennis court, to make a hard, 332; a sand, 124; lawns, 3
Tetranychus bimaculatus, 172
Texas, proposed botanic garden for, 86
Thompson, H. Stuart (*Flowering Plants of the Riviera*), 351
Thrips affecting Onions, 172
Thrips tabaci, 172
Thuya occidentalis var. Hovei, 320
Timber, preservation of outdoor, 70
Tivey, Mr. George, 401
Tobacco-growing in Morayshire, 14
Tomato chutney, recipe for, 212
Tomato, Golden Sunrise, 202; Peach Blow, 129
Tomatos, artificial manure for, 297, black rot of, 114
Torquay public gardens, 199, 267
Tree growth on Clare Island, 413
Trading with the enemy, 373
Tree growth on Clare Island, 413
Tree-planting in Uruguay, 192
Trees and shrubs, 141, 160, 208, 213, 246, 291, 320, 351, 368; at Dawyck, 125
Trees, as climatic recorders, 190; the ringing of, 320
Trenching, at Woburn, 74; bastard, 250
Trollius chinensis, 117
Tropaeolum speciosum, 241
Truffaut, Mons. A., letters from, 279, 400
Tulip Tree at Kew, 216
Tulip William Copeland, 309
Tulips, Darwin, 111
Turnip flea beetle, trap to catch, 180, 194
Turrill, Mr. W. B., appointment of, 163

U

Umney, J. C. (*Perfumery and Essential Oil Record*), 109
Underley Hall, Burnley, 37
Unemployment, a land cure for, 266, 298, 311, 340
Upton, Strawberries at, 158
United States of America, Hops, fruit and Potatos in, 95
Uruguay, tree-planting in, 192

V

Vacant land, the cultivation of, 206
Vallota purpurea, 30
Vegetable Marrows, hybrid, 298
Vegetable Products Committee, 371; scheme to assist troops, 252
Vegetable show at Manchester, 209
Vegetables, green varieties for winter markets, 319; notes on, 117, 129, 202, 298, 384; prices of, 164, 210; under glass, 123.
Vegetation, islands of, 264
Veitch and Sons' nurseries, sales of stock at, 310, 356
Veitch, Sir Harry, 279
Veitch, the late John Gould, 256
Verbascum, 67; V. Warley Pearl, 59
Veronica edinensis, 368
Victoria Medal of Honour awards, 372
Vienna Centenary Exhibition, horticulture at the, 54
Vines, remedy for mealy bug on, 341, 408
Viola trials in Scotland, 172
Vitis armata, 213; V. Henryana, 214; V. Thomsonii, 214; V. Wilsonii, 214

W

Wainwright, Mr. A., appointment of, 237
Walnuts, a pest of, 340; preservation of, 286
War, early effects of the, 148, 166, 403; farmers' horses for the, 163; gardeners, and the, 162; items, 177, 178, 179, 190, 205, 224, 238, 251, 264, 279, 295, 309, 325, 339, 370, 388, 400, 413; our duty during the, 241; the effect of, on Barbados fruit crops, 252
Wart disease of Potatos, 237
Wash for fruit trees, 86
Washington Botanic Garden to change its site, 191
Wasps, 8, 31, 181, 207; value of destroying queen, 193
Watercress, a substitute for, 37
Water gardening, 4
Watering succulent plants, 150
Water, the purification of, by magnesia, 191
Waugh, Frank, A. (*Rural Improvement*), 366
Weather and the crops, 280; effect of, on Carnation-splitting, 190; in October, 328
Weeks, Mr. Charles, 401
Weevil, the Apple blossom, 48
Westcliff, public parks at, 157
West Indian Lime juice and Orange oil, 264
West Indies, notes from the, 201
Wheat crop, extension of the, 237
Wheat-growing and Essex farmers, 117
Wheelbarrows, American, 58
White City, forestry conference at, 76
White, Mr. W. H., 252
Whiteley Park, foundation-stone laying ceremony at, 95
Whytock, Mr. J., awarded V.M.H., 372
Williamson, Rev. David R., 387
Wilson's, Mr. E. H., explorations in Japan, 309
Winter, effect of, on woody plants, 3; employment on country estates, 240, 311
Winter moth and banding of fruit trees, 299
Wisley gardens, summer drought at, 310; trials at, 300; work and improvements at, 133
Woburn, experiments at, 74
Woburn paste and Bordeaux mixture, 401
Wood used in the manufacture of gunpowder, 401
Worms and caterpillars, a request for, 207

Y

Yew, poisonous properties of, 415
Yew tree, an old, 76

Z

Zephryanthes candida, 240

SUPPLEMENTARY ILLUSTRATIONS.

Aloe succotrina in Botanic Gardens, South Africa (December 19)
*Apple Peacemaker (August 1)
Athens (October 24)
*Begonia Altrincham Pink (October 10)
*Carnation "Wells' Champion" (December 5)
Cattleya Mossiae (October 3)
*Clerodendron splendens (July 11)
Cotoneaster bacillaris and C. salicifolia var. rugosa (December 26)
*Gloriosa Rothschildiana (July 25)
Hemitelia capensis in Botanic Gardens, South Africa (November 21)
*Hippeastrum Daphne (August 22)
Miltonia vexillaria Laelia Sander (August 29)
Papaver orientale Perry's White (August 15)
*Poinsettia pulcherrima rosea (September 12)
*Tulip William Copeland (November 7)

* *Coloured Plates.*

(*For List of General Illustrations in the text see next page.*)

form of the glabrous European Black Poplar, from which it differs only in the peculiar habit, all the branches being directed vertically upwards. Much erroneous matter has been written about the origin of this tree, some old writers considering it to be a distinct species, native of Asia Minor or Persia. I have given elsewhere* historical evidence proving that it originated, probably as a single tree, between 1700 and 1720 in the plains of Lombardy. From here it spread rapidly by cuttings over the whole world, reaching France in 1749, England in 1758 and the United States in 1784, while it was carried to the Levant about 1750 by the Genoese. It is unknown except as a planted tree in Asia Minor, Afghanistan, and India.

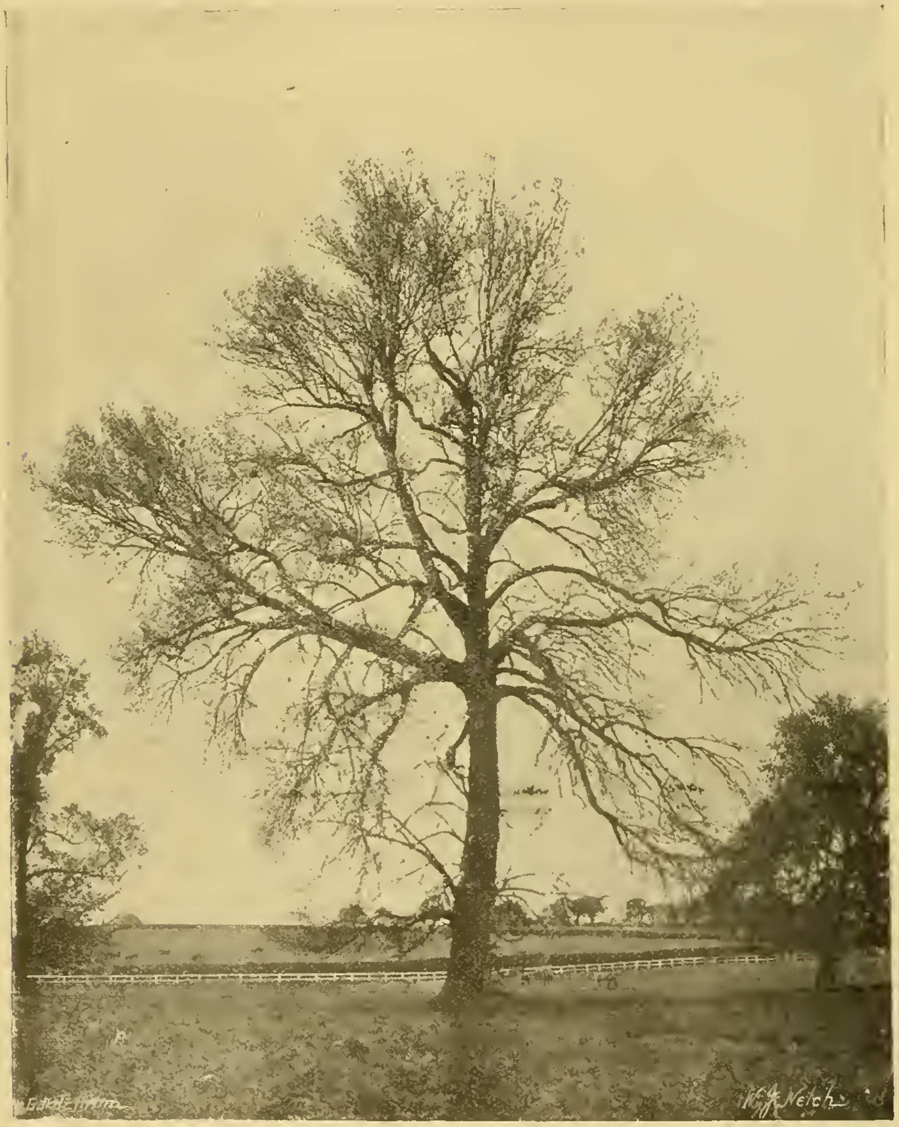


Fig. 2.—ENGLISH BLACK POPLAR, POPULUS NIGRA VAR. BETULIFOLIA, AT BISHOP'S STORTFORD.

The original Lombardy Poplar was a staminate tree, and all trees propagated from this are consequently of the male sex. The rare female Lombardy Poplars, which have been reported to occur in Germany from time to time, have not strictly vertical branches, and appear to be seedlings from Poplars of the ordinary spreading form, which were pollinated by the pollen of the Lombardy Poplar. The only female Lombardy Poplar with a truly fastigiate habit which I have seen is a tree (fig. 3) in Kew Gardens, about 50 feet high, which produced pistillate catkins in 1908, 1910 and 1914. The origin of this is quite unknown.

Populus plantierensis † is the fastigiate form of the pubescent (or English) Black Poplar, and derives its name from the nursery of Simon-Louis at Plantières, near Metz, where it originated. M. Jouin, the present proprietor of this famous nursery, where so many sports and hybrids have been raised, told me last year that there existed in 1868 a line of female trees of Populus nigra var. betulifolia, alongside some Lombardy Poplars, and that fifteen seedlings of fastigiate habit were found, which constituted the original stock (both sexes occurring). One of the original trees, which is a male, measured 74 feet high by 5 feet in girth in 1908. This tree can only be distinguished from the ordinary Lombardy Poplar by its hairy twigs and petioles. It is doubtful if it is more vigorous, but its growth can be seen at Kew and at Glasnevin, where there are excellent specimens of this and most of the other remarkable Poplars.

The fastigiate habit may occur as a sport in any species of tree. Some are still very rare in cultivation, as the fastigiate Beech, which is only known as a single tree at Dawyck, and the fastigiate Scots Pine, the original example of which is at Dryburgh. Amongst the Cypresses and Junipers, fastigiate seedlings are more numerous than in other genera, and appear to breed true to the habit. Lord Selborne gathered from an upright Mediterranean Cypress at Scutari in 1884 two or three cones, which lay forgotten in a drawer till 1895, when their seeds were sown. Seventeen seedlings resulted, all like the parent in habit. These were about 6 to 15 feet in height at Blackmoor in 1910. With an increase from seed in the number of fastigiate individuals, as occurs in the Cypress, we see the transformation from a sport to a constant form, which, if more suitable than the spreading ordinary form in some environment, might become by selection a geographical variety.

In North America, east of the Rocky Mountains, there occurs one species of Black Poplar, divisible, like the European species, into distinct geographical varieties. This widely-distributed American Poplar has been identified by American botanists with Populus deltoidea, Marshall, an old name to which is attached a vague description. The first certain description of any form of the species was given under the name Populus monilifera, Aiton, a type specimen of which can be seen in the British Museum; and I adhered to this name in *Trees of Great Britain*, vii. 1807 (1913); but as the business of nomenclature is to get some name fixed to a species, I think it now better to adopt the name favoured by American botanists.

There are three distinct forms of the American Black Poplar in the wild state, all of which have identical floral characters, and all differing in foliage from the European species as given above. These are distinguishable as follows:—

1. Populus deltoidea var. monilifera, Henry [Populus monilifera, Aiton, *Hort. Kew.* iii. 406 (1789)].

Leaves deltoid-ovate, about 3 inches long and wide, abruptly contracted into a long non-serrated apex; base wide and shallowly cordate, bearing two glands at the junction with the petiole in front; margin densely ciliate; both surfaces and petiole quite glabrous, except for a few evanescent hairs on the midrib and main nerves.

This variety, which may be conveniently called P. monilifera, is wild in Ontario, Quebec, New England, New York, and Pennsylvania. Its habit is shown by fig. 4, representing a tree growing near Ithaca (N.Y.), about 100 feet in height and 13 feet in girth at 5 feet above the ground.

This Poplar was early introduced (about 1700) into France and England, but has not been propagated for many years, as it was supplanted by the fast-growing hybrids. The only tree that I have seen in England was one in the Cambridge Botanic Garden, cut down some years ago, but replaced by a cutting, which is thriving. There are two other old trees in England which have been identified with this species. No tree is more easy to identify by the form of the leaves, and it is remarkable that the unlikeness of the hybrid forms escaped notice, the latter still masquerading in books and nursery catalogues as P. monilifera or its synonym P. canadensis, names only applicable to the true American species.

2. Populus deltoidea var. occidentalis, Rydberg [Populus Sargentii, Dode (1905); Populus occidentalis, Britton (1906)].

Leaves smaller than in the preceding, thicker in texture, and lighter in colour, deltoid, truncate at the base, with fewer and coarser serrations; glabrous.

This, which is the xerophytic form of the species, grows in North America in the territory east of the Rocky Mountains, from Saskatchewan and Alberta southwards to New Mexico and western Texas, and is the characteristic tree on the river flats of the western prairies. It has not been introduced. *Aug. Henry.*

(*To be continued.*)

---

* *Trees of Great Britain and Ireland*, VII., 1798 (1913). Seguier, in *Plantae Veronenses*, II., 287, published in 1745, states that the fastigiate and ordinary Black Poplars differ only in habit, and in the first being a planted, the latter a wild, tree.

† So named by Dode (1905). This name is convenient, but it is more properly called Populus nigra var. plantierensis, Schneider (1906).

HARDY BIENNIALS.

(*Continued from p.* 432.)

CELSIA CRETICA.

This plant, although classed as a half-hardy biennial, frequently stands the winter if sown about July. It makes an effective plant about 4 feet high, and has Mullein-like spikes of yellow, brown-spotted flowers. It grows in common soil.

CAMPANULAS.

Of the hardy Campanulas which are best treated as biennials, or are really such in nature, the most popular is the Canterbury Bell, Campanula Medium. The seeds are best sown in the open in June in shallow drills, and covered to a depth of about a quarter of an inch with fine soil. Prick the seedlings out into light but well-manured soil, about 3 inches apart. They should be encouraged to make free growth by watering in dry weather, and occasional waterings with weak liquid manure. A second transplanting may be given early in August if the plants become crowded, and they should be put in their flowering quarters in September or October, or left over until spring if the ground is required for other plants.

These handsome flowers can now be had in strains of distinct colours, which will be found useful for colour effects, but packets of mixed seeds are also procurable. The Cup-and-Saucer varieties, Campanula Medium calycanthema, are very effective from the calyx being coloured like the corolla. The Chimney Bell-flowers, Campanula pyramidalis varieties, are not much used as hardy biennials, although they can be treated as such by raising them in the same manner as the Canterbury Bells. Although not, as a rule, so fine as when cultivated in pots under glass, they make good border flowers.

Other good Campanulas which are either true biennials or are best cultivated as such are C. longistyla, blue, 3 feet; C. multiflora, blue, 1½ foot high; C. patula, light violet, 2 feet; C. petraea, a pretty Alpine species, with yellow flowers, only about 9 inches in height; C. sibirica, blue, 1 foot; C. thyrsoidea, a curious yellow-flowered species, about a foot high. The allied Symphyandras also afford us two plants for biennial treatment, these being S. Wanneri, red-purple, about a foot high, and S. Hofmannii, white, the same height. The above can be raised and cultivated in the same way as the Canterbury Bells, but the species should have a drier soil.

DIGITALIS PURPUREA.

The Foxglove is one of the most important of the plants generally cultivated as biennials, and its noble spikes of brightly-coloured flowers are highly effective everywhere. The wild Foxglove is far outshone by the glorious garden strains, with colours of the most varied hues, and many of the blooms, especially in the gloxinioides strains, are wonderfully spotted. They are easily raised from seeds, sown in the open in ordinary soil, from April to July, and transplanted early to where they are to bloom. If they cannot be transplanted early they should be prevented from making long tap roots by planting them on ground which is hard underneath. Thin sowing, early transplanting, and growing with as little check as possible, will give the finest plants.

Digitalis ferruginea, a biennial Foxglove, about 4 feet high, has dull yellowish flowers veined with purple, and is a suitable plant for those wishing something distinct from the ordinary Foxglove of gardens. It can be treated in the same way as the others.

ECHINOPS.

A few of the species of Echinops, or Globe Thistles, are of biennial duration, but the only one worthy of much consideration is E. bannaticus, the Bannat Globe Thistle. This is one of the prettiest of this ornamental genus, the plants growing to a height of about 3 to 4 feet, and having effective leaves and blue flowers. It is easily raised from seeds sown in the open in May, June, or July, and planted out when in a young state where it is to bloom. If left until late in the season it is liable to be dwarfed.

DIANTHUS BARBATUS.

Sweet Williams, as the varieties of Dianthus barbatus are commonly called, are old-fashioned plants, best treated as biennials. They are not in so much request as they were many years ago, but they are valuable flowers, and when well grown make excellent garden plants.

They should be sown, either broadcast or in little drills in sandy soil in the open, from April till July, May being, perhaps, as good a month as any. Sow very thinly and cover with about a quarter of an inch of fine sandy soil. Shade during very hot weather, and water if necessary through a fine rose. As soon as the seedlings appear, light should be gradually given, and when they have made two of their true or second leaves prick them out from 1 to 2 inches apart in light soil. When they have become established pinch out the tops, and after they have made some fresh growths plant out in good soil, made rather firm beneath, and in an open situation. If sown early they may again have the tops pinched out early in August, and in late September or October transplanted to where they are to flower. They may, however, be left until April, but Autumn planting is best. Plant in good soil, not too heavy, but well manured with old manure, preferably that from the cowhouse. *S. Arnott.*

(*To be continued.*)

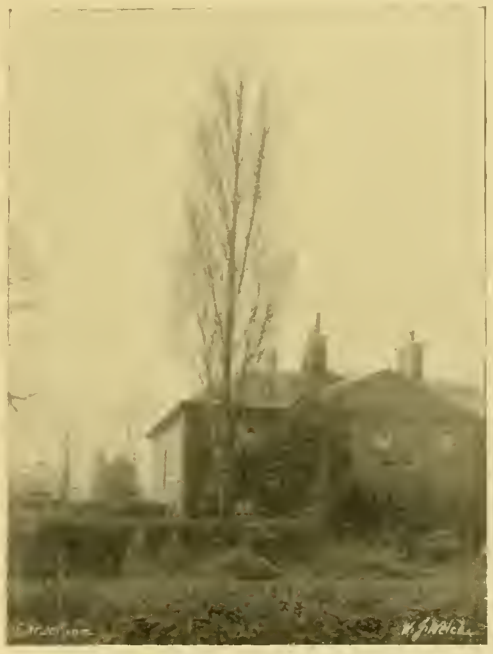


Fig. 3.—female lombardy poplar at kew.
(See p. 2.)

NOTES ON FRENCH HORTICULTURE.

MISTLETO IN FRANCE.

The Minister of Agriculture ordered last year an enquiry to be made in all parts of France on the mode of propagation of and losses caused by Mistleto. The results (published in *Bulletin des Informations Agricoles*, February, 1914) show that the trees most frequently attacked are Apple and Poplar. Mistleto in France is rare on other common trees and extremely rare on the Oak.

Nature of soil does not appear to play a decisive part in limiting distribution, and as regards altitude, Mistleto has been recorded in the Basses Alpes at a height of 3,600 feet on Pinus sylvestris. The damage is negligible, except where the Mistleto is very abundant, but when it is abundant the Poplar suffers and the fertility of Apple and Almond is reduced.

EFFECT OF WINTER ON WOODY PLANTS.

The Dendrological Society of France has made an enquiry into the effect on vegetation of the winter 1913-14, which was somewhat more severe than recent winters.

Although there were two fairly long periods of frost, and although in the neighbourhood of Paris minima of 25° were recorded, damage appears to have been unimportant. The results of the enquiry are chiefly interesting because of their bearing on the hardiness of a certain number of newly-introduced plants.

In the east of France (Nancy) it is reported that the following have suffered no ill-effects from the winter:—Viburnum rhytidophyllum, Davidia involucrata, Eucommia ulmoides, Lonicera pileata, Osmanthus Delavayi, Populus yunnanensis, Pinus Armandii.

In the neighbourhood of Paris, at the School of Arboriculture, St. Mandé, M. Pinelle reports: Cistus (various species) and Clerodendron foetidum were affected, but C. trichotomum and C. Fargesii were not injured. Osmanthus Delavayi suffered very much. Viburnum odoratissimum and V. Tinus were badly damaged; whilst V. Carlesii and C. rhytidophyllum were not touched. Also unharmed were Edgeworthia papyrifera, Ehrelia macrophylla and Piptanthus nepalensis, and the following plants were killed by frost at Verrières-le-Buisson, in the gardens of M. Philippe de Vilmorin:—Abies religiosa, Arundinaria Falconeri, Buddleia macrostachya, Fuchsia Riccartonii, Nothofagus Cunninghamii, N. uliginosa, Pinus Lumholtzii, P. oocarpa and P. tenuifolia, Smodingium argutum, Stransvaesia glaucescens (whilst S. Davidiana appears not to have been affected). The following suffered somewhat:—Actinidia Henryi, Ercilla spicata, Quercus acuta, Quercus incana, Callicarpa japonica, Desfontainea spinosa, Stillingia sebifera, Aristotelia Macqui, Tsuga yunnanensis, etc. The following resisted the frost perfectly:—Laurus Benzoin, Umbellularia californica, Ehretia macrophylla, Ligustrum Delavayi, Zelkova Davidiana, Eucommia ulmoides, Jasminum Beesiana, Davidia involucrata, Carrierea calycina, Populus lasiocarpa and Pinus Ayacahuite (Veitchii). *A. Meunissier.*

LAWN TENNIS GROUNDS.

TREATMENT DURING THE SEASON.

The treatment of the lawn tennis court requires more care than when the game was first instituted forty years ago. Then club grounds were scarce and people took things as they found them; but nowadays, since the fast game has taken so much hold, players have become critical, and the success of the club now depends more on the excellence of the courts than on anything else. Artificial courts have arrived and set the grass courts a new and higher standard.

The visitor, whether he is in the ground for hard play or social chat, is always critical, and the keener he is the less likely he will be to overlook the defects in the court, the condition of the nets, the white canvas top, and the varnish and the neatness of the posts!

Another matter which affects new-comers is the margin around the court and the general background. In many cases walls exist; these may be painted a light drab or black, but preferably a green. Overhanging trees which shade the court add undoubtedly to the beauty of the ground, but often at a sacrifice of light; therefore, while they should not be entirely dispensed with, a few branches may sometimes be lopped.

The club courts should now be in the height of perfection. But to keep them in this delightful condition will necessitate constant care and attention; and now that they have had two months' wear, the critical visitor will at once detect the use or the abuse of both roller and lawn mower, to say nothing of the work on the court of the over-zealous workman.

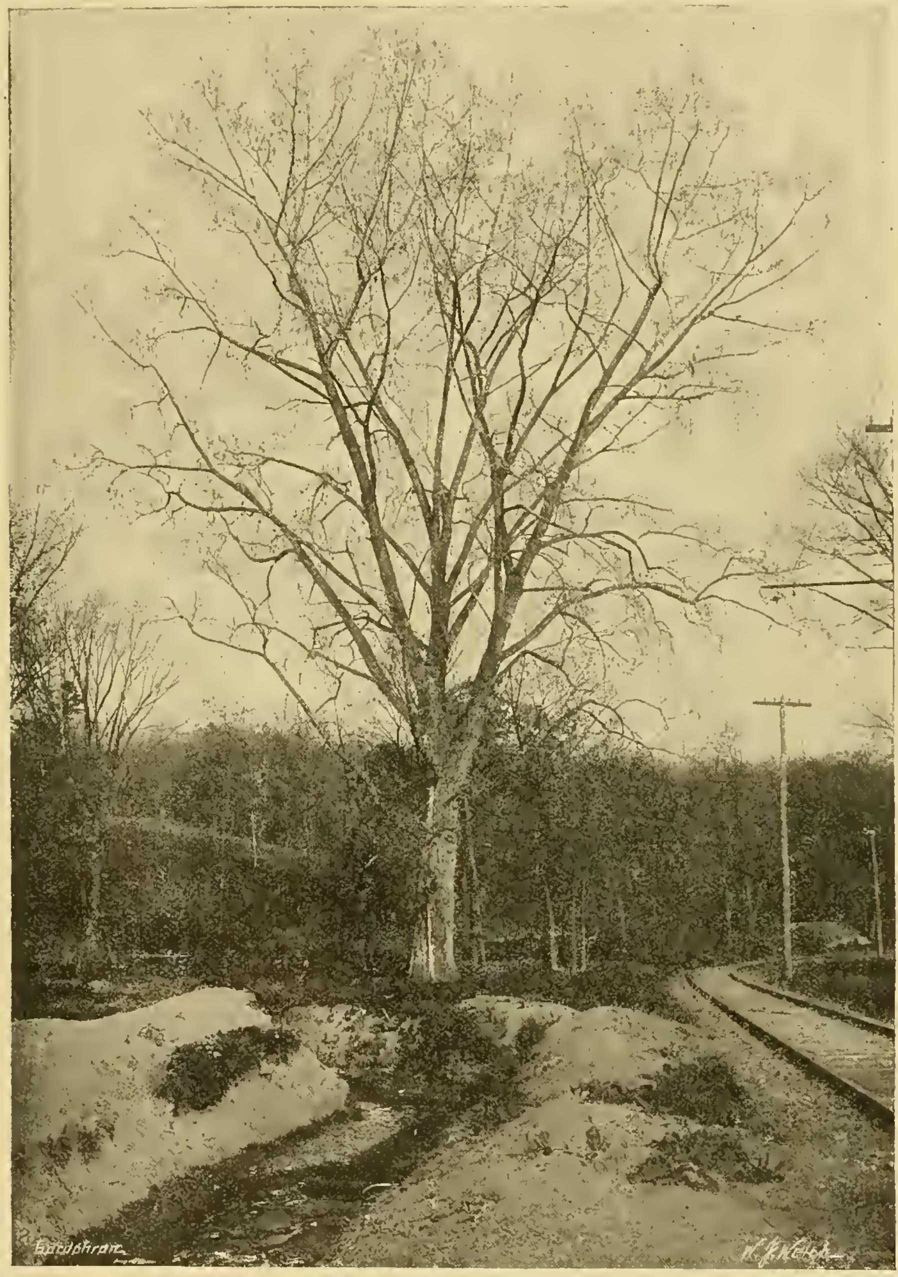


Fig. 4.—American Black Poplar, Populus deltoidea var. monilifera, near Ithaca (N.Y.). See p. 1.)

One ground under observation which was laid out some years ago on approved methods is already bare. This is not due to excessive play and hard wear, but to excessive rolling and mowing. Last season, after hard wear, the zealous groundsman was at work upon it with roll and mower until well on into the winter; and while he favoured artificials when allowed to get them, he was averse to farmyard manure. A court that is worked hard must be renovated; but this having been neglected, the members of this particular club have a starved ground, on which moss and weak grass predominate, to play on this year! I quote this as an instance of the misuse of the lawnmower. On wet grounds, in a normal summer, the mower must be freely used; but even on these courts during hot, dry weather the machine should not be set too close. Generally speaking, the groundsman should work from end to end of the court and should roll in the same manner. If this is persisted in the grass will be left lying up and down on the length of the court, and not crossways. On the best of grounds, however, there will be occasional long, wiry spears of grass which escape the cutter, and where these are too much in evidence relief may be obtained by transverse mowing, care being taken to roll lengthwise afterwards.

Patches on the ground indicate two things. In some cases sinkage from bad levels or improper drainage, and an excess of clover. And clover, which retains considerable moisture, affects the player. When allowed to remain in compact beds it makes a surface of green mat which stains the balls and more often than not makes running dangerous. It spreads quickly in all weathers; it is likely to smother the finer grasses, and, being a gross feeder, it thrives on many artificials recommended for lawns. Where it is to be kept out I would not advise the use of basic slag.

The rains experienced in some parts have proved most beneficial to grass courts, but at any time the groundsman may experience a long spell of hot, dry weather, when he will be faced with the problem of how and when to water.

The adequate water supply for the club ground frequently presents difficulty. Taken from the water company's mains, it means expense and a length of hosepipe, and in no case should watering commence until the evening after the courts have been closed. But the trouble does not stop there. A little water is ineffective, and while sufficient should be used to soak into the ground several inches, the court must not be subjected to a sudden flood. A sudden rush of water thrown on, for instance, from a bucket washes the fine soil away from the roots of all the best grasses. This practice results in considerable damage. Where possible a lawn sprinkler should be used. This will cover a third of the court with a gentle shower. Failing this ingenious method the next best thing to use is the hosepipe with a spray, or the ordinary watering-can with a fine rose.

The tournaments, of which two or three may occur during the season, are generally looked forward to by the members of the club, who expect to find the courts in good order. Such events entail again extra care, and in dry, hard weather extra watering.

A week before the fixture (if one or more courts can be saved a bit) it should be thoroughly well soaked, and then rested for a couple of days. It should then be rolled and cut, and on the eve of the tournament refreshed again with water gently laid on, and before play begins the courts thus treated may be swept with a soft broom and receive the usual attention. This extra preparation will well repay the management of the club, while the groundsman will have the satisfaction of knowing that he has done all that can be done to get his ground in good order. *Harry Danes.*

SOME ASPECTS OF MODERN GARDENING.

(*Concluded from Vol. LV., p. 459.*)

Water Gardening.

In regard to the water garden, Mr. R. W. Wallace spoke as follows:—I would speak of the later development of this phase of gardening rather than of the mere planting by lake and pond sides, interesting though this is and delightful in results.

I have in mind the possibilities that lie amid the surroundings of flat meadow lands that adjoin a small river or watercourse, through which a stream or small canal finds its way. By merely diverting this small feeding stream and digging out various channels and widening them at intervals into larger pools we soon have a network of smaller pools and courses, all set in meadowland capable of much fine planting.

Such a meadow might well join the woodland we have just been contemplating; and passing from the wood we find ourselves in what was once a flat piece of meadowland unrelieved by any planting, but now presenting a picture of slow-moving streams with their banks clothed at intervals with slender vegetation rising in soft outline, widening here and there into pools on whose surface are floating many-coloured Water Lilies: the skyline broken by the planting of Willows, whose graceful habit and soft colours give an indescribable charm to the landscape.

Should there be any large expanse of water its banks would be found the best places for the larger-leaved plants, such as Gunneras, Rheums, and giants of the waterside—the Reed Maces, Typha latifolia, and T. angustifolia, the Giant Reed (Arundo Donax) which I have seen in September 16 feet high, and, if you have room, a few of the graceful Bamboos, such as Quilioi, mitis, and viridi glaucescens.

Within the area of the water meadow positions must be found for several Willows. They serve to give height to the landscape and softness of outline. Salix vitellina aurea pendula has been planted freely, and a more beautiful sight in spring I do not know. The drooping branches seem to be involved in a mist of golden rain. The weeping White Willow is very beautiful, and possesses a picturesque outline of growth peculiar to itself. A few bushes of the Silvery-leaved Willow—Salix regalis—make a pleasing change, as also does the Rosemary-leaved Willow. Two dwarf Willows, used mainly for clothing banks and filling odd corners, are Salix purpurea nana, very pleasing in its purple stems and dense fine foliage, and Salix sericea pendula, with its downy, grey-leaved procumbent stems reaching out over the water.

The cut-leaved Alder—Alnus lacinata—and the similar foliaged Sambucus tenuifolius are both to be noted as fine. In Reeds and Rushes we have many fine plants. The large Typhas I have already mentioned, but you cannot do without the slender stenophylla and the tiny minima, with its curious globe-shaped mace. The Wild Rice (Zizania latifolia) rises high in a corner with its Iris-like foliage, the rustle of which is always distinctive. I have never seen it in flower, though in September the tall spikes, with handsome polished green stems, begin to lift themselves, but never develop fully on account of the lateness of the season.

Among the smaller-growing inhabitants of the waterside, both semi-aquatic and otherwise, will be found the sweet flag, Acorus calamus (how few know the fragrance of its leaves; or the Japanese variety with its variegated foliage!), the beautiful native flowering Rush, with its pink, cup-shaped flowers borne in umbels, and the Galingale, Cyperus longus, a most distinct and ornamental plant at the water's edge, with its tall, slender, and aristocratic foliage terminating in a spiked inflorescence of green and brown.

The Giant Buttercup (Ranunculus lingua grandiflora), with its free growth and tall spikes of yellow flowers, is possibly the best of all waterside plants. Nor must I overlook the water Forget-me-not. Along the banks of the smaller and narrower streams much effective planting can be done by the use of the lesser-growing bog plants in broad masses, with occasional planting of larger-habited plants. In such plantings will be found masses of Mimulus growing and flowering in greatest profusion, such as luteus, cupreus, Berneti (particularly effective), and Brilliant, which is so beautiful in its dark colour and dwarf habit. The Kingcups (Calthas) are fine in spring, particularly polypetala, and Primulas, of course, in many colours.

Orchis foliosa and O. maculata superba should grow close to Epimediums, which latter are highly prized on account of their beautiful foliage falling right down to the water's edge. As taller occasional plants, we cannot do better than make free use of the Irises of the Siberian group, particularly Snow Queen and Delavayi, and our wild English Waterflag and its primrose-coloured form; and, for a later effect, Senecios, Cimicifugas, and Astilbes.

I will now draw brief attention to some of the bolder-growing herbaceous plants which thrive amongst moist surroundings. Reference has already been made to the Astilbes, and these, together with the Spiraeas, form, I think, the most important group we have; easy of growth and increase, free-flowering, they are indispensable during the summer months. The unique crimson colour of palmata is superb, and, when well established, this species reaches 3 to 4 feet in height. Tall plants of fine stature and superb foliage to be seen from a distance are the white-flowered gigantea and its pink variety, and venusta, with 6 to 8 feet high spikes of soft, rosy-pink flowers. These Spiraeas may be well grouped together with Gunnera and Senecio clivorum at some distant point seen across the water, and I might also add Rheum palmatum for early effect.

The introduction of Astilbe Davidii has given rise to a number of hybrid forms partaking of the strength of Davidii, but with a more subdued range of colour. Many of the best we owe to Mr. Arends. His Salmon Queen, Cream Pearl, Venus, and Vesta forms have given quite new colours to this genus. Astilbe grandis, one of Wilson's Chinese plants, is delightful in its early growth; the ruddy-tinted stems covered with hairy growth contrasting effectively with trollius in creamy shades close by. In fact, many of the Astilbes are worth special grouping on account of the colour of their foliage in a young state, which acts as a delightful foil to such plants as the already-mentioned Trollius, double Welsh Poppy (which is splendid by water), Mimulus, etc.

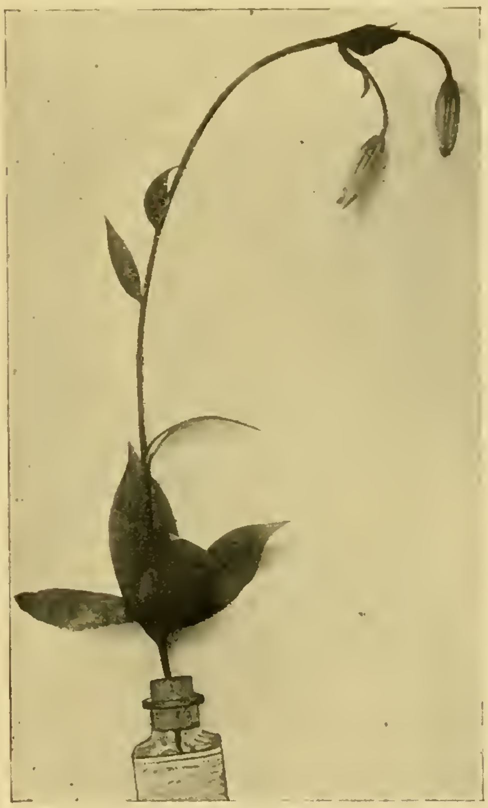


Fig. 5.—METHOD OF PRESERVING CUT FLOWERS DURING TRANSIT BY POST.

Bocconias are fine in foliage, especially when they escape late frosts. So are the purple Loosestrife (Lythrum) and Eupatorium purpureum.

So far in these remarks I have omitted all reference to what I think may be called amongst hardy plants the chief glory of the water garden in July.

I refer to the Japanese Iris, Iris Kaempferi. In view of the general desire to grow these fine plants, and having myself been particularly successful in their culture, I may usefully refer here to what I regard as the main conditions of success. They will do well in any well-worked soil rich in vegetable matter, but avoid planting in heavy clay by water-side. On meadow pasture land, alongside ditches and small ponds, planted just above the water-line, in soil that has been well dug and manured and well drained, they will thrive splendidly, and often seed themselves freely in the grass.

Another point, division after flowering in August or early September is best. You will find in early autumn quantities of new roots pushing, so that by early planting you gain all this new root action. Again, in February, countless fibrous roots are pushed out This is the time to mulch freely, and about May dam your ditches, if possible, and flood freely. Division of the clumps every two or three years is good, and planting in fresh soil, as such greedy rooters quickly exhaust the surroundings.

You may ask, "Why take all this trouble?" Well, if you do you will have foliage over 3 feet in height, and spikes 4 feet high, five to six on a clump, and your water-side and ditches will glow with colour, huge flowers, more like gigantic butterflies just poised, and such a combination of colour as I do not think is to be found in any other plants. One more point, always plant in fullest exposure in the sun; remember they cannot have too much water in the growing season, but when at rest they should have as little as possible.

I have referred to crossing the water with low stone bridges. Long, broad, flat stones placed just above the water surface, and crossing your narrow stream at intervals, or the use of stepping-stones, or both combined, are fine features in the water garden, and always at such crossings group at either hand, as has already been suggested, Iris Kaempferi and tall reeds and rushes. When rightly placed, and not too many of them, these give you that necessary feeling of support, and seem the natural finish to the bridge or stepping-stones.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Transit of Flowers by Post.—I have just received a hybrid Lily from Mr. A. Grove packed as shown in fig. 5. This plan of sending delicate flowers by post seems to me so ingenious that I venture to suggest to some maker of horticultural sundries that it would be worth while to produce for sale similar boxes of various sizes. The stem of the flower is passed through a hole in the cork of the bottle, from which no water has escaped. I believe that if packed in this manner flowers cut in bud might be kept for some days or even weeks without withering. *H. J. Elwes, Colesborne.*

The Beginning of the Rose Season.—When the earliest Roses appeared in our Scottish gardens some weeks ago, the conditions were highly unfavourable. The weather was cold, with a withering north-east wind. As a natural consequence, many plants will, I venture to predict, be a long time in recovering, if ever they do so, from its disastrous effects. My Irish Roses, such for example as Hugh Dickson, Mr. Herbert Stevens, Old Gold, Dorothy Ratcliffe, Duchess of Sutherland, and Evelyn Dauntesey, have been greatly injured in their growth; though I am not without hope that they may recover to a great extent their normal capabilities during the autumnal months. Much more promising, probably by reason of their more protected situation, are such fine varieties as British Queen, Countess of Gosford, and Frau Karl Druschki; of which the first-mentioned Hybrid Tea, which created such a sensation when it was first exhibited, has proved itself a much more vigorous grower than I had anticipated. It is, in my opinion, widely different from the great Rose it was expected to supersede; it has a somewhat pendulous tendency, like that of its Tea parent, the white Maman Cochet, and its exquisite formation and refined fragrance likewise irresistibly remind me of that highly susceptible Rose, which has only once or twice succeeded here—in exceptionally fine seasons—to my perfect satisfaction. But on the other hand, British Queen is not quite so much dominated by atmospheric influences. The splendid sunlight that has recently and providentially prevailed has had quite an inspiring effect on some of the older Hybrid Perpetuals and Hybrid Teas on which I greatly fear we have still chiefly to rely for effective garden ornamentation. This improvement in their aspect is chiefly observable in such invaluable varieties as Clio and Enchantress, which, whatever the character of the season, seem invariably to succeed; Margaret Dickson, one of the most aspiring and floriferous of all my possessions; White Lady, a fine derivative from Lady Mary Fitzwilliam; La France, whose colour, formation, and charming fragrance still form an irresistible combination of the grandest characteristics; the invariably commanding (if only in dimensions) Caroline Testout, and the free-flowering, intensely sweet Viscountess Folkestone. Few flowers are more attractive at this gracious season than those of the Austrian and Penzance Briars, whose very foliage is an odorous fascination; among the loveliest of them are Rosa Harrisonii, the uniquely-coloured Austrian Copper; Lady Penzance; and Jeanie Deans. *David R. Williamson.*

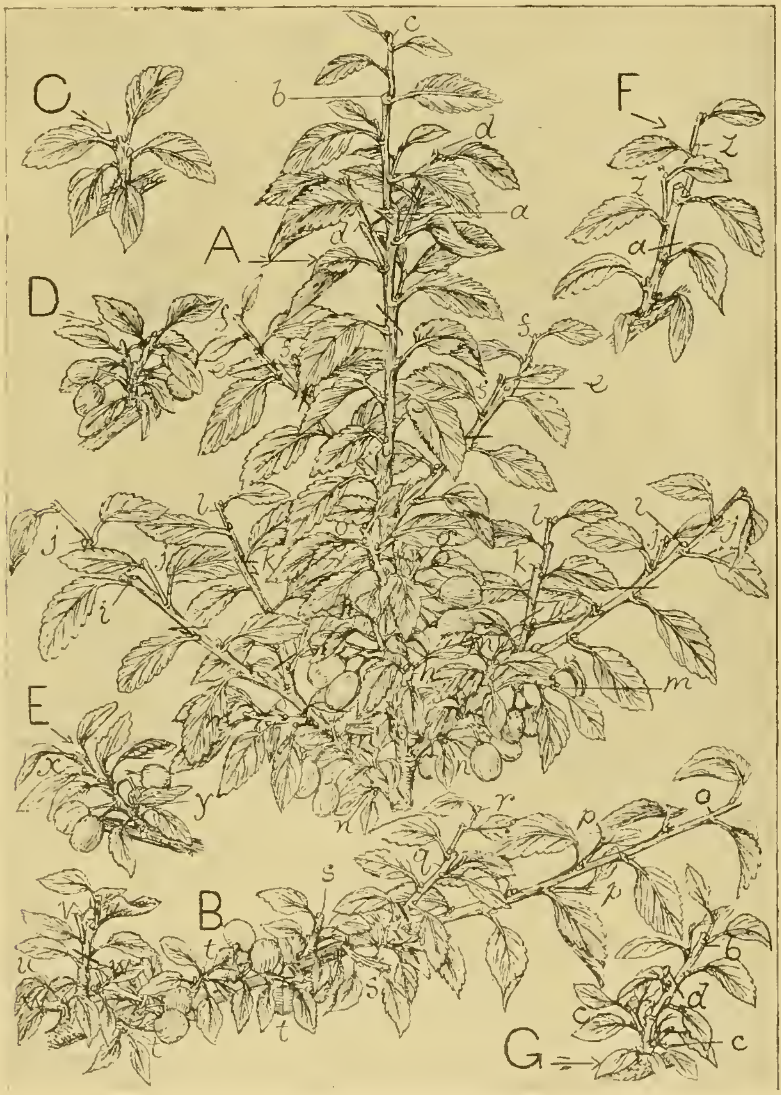


Fig. 6.—Summer pruning the plum.

Summer Pruning of the Plum (see fig. 6).—I was much interested by the very practical article by Mr. W. R. Thatcher in the *Gardeners' Chronicle* for June 13 last, p. 404. This has prompted me to send you an illustration of "Summer Pruning the Plum," which you may possibly consider worthy of reproduction. The letters in the figure indicate the following:—A. Central portion of a pyramid tree showing: (*a*) leading or stem continuation growth stopped at about 12 inches, or to eight or nine good leaves; (*b*) continuation of leader stopped at third leaf; (*c*) subcontinuation lead that need not be pinched unless extending beyond growth shown; (*d*) laterals and sublaterals pinched to one leaf; (*e*) side growth from stem stopped at fifth leaf; (*f*) extension and laterals pinched to one or two leaves; (*g*) short, stubby shoots that are not stopped; (*h*) spurs left intact; (*i*) continuation growths of previous season's side branches stopped at fifth or sixth leaf (about 6 inches); (*j*) laterals and sub-laterals pinched to one leaf; (*k*) side growths of side branches stopped to four or five leaves; (*l*) laterals and sublaterals pinched to one leaf; (*m*) short, stubby shoots not shortened; (*n*) spurs left intact. If the tree is young and extension is desired, the wood being well matured, no winter pruning is advisable; if growth is immature, or but little extension is desired, shorten at winter pruning to cross lines, and root prune. B. Portion of branch of espalier or wall tree: (*o*) continuation of branch growths; (*p*) laterals, if any, stopped to one leaf; (*q*) side growth stopped to four or five leaves; (*r*) laterals and sublaterals pinched to one leaf; (*s*) short, stubby shoots not shortened; (*t*) spurs left intact; (*u*) two-year spur; (*v*), growth from uppermost pruning bud of previous year pinched to four leaves and laterals to one lead; (*w*) spurs formed; cross lines, points of winter pruning; continuation of trained shoot not shortened unless unduly long or desired to originate growths, then to point expedient on well-matured wood. *Natural spurs.* C, in year of formation; D, in second season; E, short, stubby shoot in second summer; (*x*) extension; (*y*) spur. *Originating spur.* F, side growth stopped at fifth leaf; (*z*) laterals and sublaterals to one leaf; (*a*) point of winter pruning. G, Result of F in following summer: (*b*) growth from uppermost pruned bud of previous year stopped to five leaves, and laterals pinched to one leaf; (*c*) short stubby shoots or spurs; (*d*) point of shortening at winter pruning. *G. Abbey.*

Classification of Roses.—Your correspondent, *Blue Rose*, has evidently not read the articles upon this subject which appeared in the National Rose Society's *Annual* of 1914 or he would have known that on page 41 of that publication I advocated the very thing he is now proposing, i.e., the formation of an International Committee of experts to consider the very important matter of classification. There are so many excellent authorities upon the Continent and in other parts of the world, and as the Rose is such a universally popular flower it would be exceedingly indiscreet of the National Rose Society of England to take it upon themselves to revise the existing classification. Now that the matter has been brought forward it is to be hoped it will not be allowed to drop. *Walter Easlea, Eastwood, Leigh-on-Sea.*

The Lesser Narcissus Fly.—I should not have troubled you with a further note were it not for the very useful letter of Mr. F. J. Chittenden (p. 435), which surely proves my case "to the hilt." It is obvious that it is Mr. A. J. Bliss who misses the real point, and not I. That gentleman confuses his point with the real point. It has been obvious all along that his "point" has been that the fly attacks the unhealthy bulb, and does so in search of decayed matter which it seeks to "scavenger" (an idea possibly derived from three lines on p. 34 of last year's edition of Sydenham's *All About Daffodils*), but that it does not attack the healthy bulb. In support of this contention Mr. Bliss has adduced no affirmative evidence whatever. But the real point, which Mr. Bliss appears unable to realise, is, as plainly stated in my last note, whether the fly will in any circumstances attack healthy bulbs, for, if it will, then, in view of its enormous increase, all the precautionary measures which I and others have suggested become absolutely necessary and urgent. The Board of Agriculture has affirmed this in no uncertain terms, and now we have the added testimony of Mr. Chittenden that "at least at times the larvae attack healthy bulbs," and those who know this gentleman will feel sure that he would not have stated this unless he had absolutely proved it. This fact goes to the root of the whole matter. Whether the fly may, or may not, under certain conditions, feed also on decayed matter must at present be a matter for more conclusive evidence, for the fly has been found (certainly in nearly all cases in my own garden) to—again quoting Mr. Chittenden—be "feeding in bulbs which show no other damage than can be accounted for by the larvae feeding in the bulb," and it must always be difficult, especially where there are very many larvae, to accurately differentiate between the amount of excreta and "decayed matter" resulting from the presence of the larvae and any excess of decayed matter not so to be accounted for. But, as a matter of argument, it might be conceded that, on occasions, the fly may feed on decayed matter, but that leaves untouched the dominating fact that they do at times, and in my experience generally do, attack healthy bulbs. And this correspondence has now fully established this conclusion. I am glad to know that Mr. Bliss agrees with me that the Board of Agriculture is not "stupid." I rather feel inclined to transfer the term to those who would allow themselves to be persuaded by reason of a little possibly unnecessary trouble to expose themselves to risks and consequences which, as is now shown, may prove very disastrous to them in the future. It is bad policy to "cry peace when there is no peace," and a grave responsibility attaches to those who do so. *Charles E. Shea.*

——There seems to be no record of the Lesser Narcissus Fly (Eumerus strigatus) occurring in Shallots in this country, although it is said to attack this crop on the Continent. During 1911, however, I hatched out a number of these flies from Shallot bulbs where the larvae had been feeding in company with those of the Onion Fly (Anthomyia ceparum). *A. Simmonds, St. Albans.*

——With your consent I would like to chronicle one more letter having reference to this most amusing and instructive discussion. Mr. Bliss, receiving a hint from a friend that Eumerus was a scavenger, followed up the clue, and demonstrated to his own satisfaction that it did not feed on living matter. The Daffodil cult at that time, owing to Eumerus, were anticipating an expensive conflict, believing the fly to be really dangerous; therefore Mr. Bliss communicated with the *Gardeners' Chronicle* with a desire to encourage an optimistic view. Mr. Charles E. Shea, who evidently holds pessimistic ideas relative to this particular fly, expressed himself strongly against optimism, and urged a war of extermination against it. He, however, found the arguments against himself so strongly expressed that the controversy must have ended here; but an article confirmatory to his views came out in the May number of the *Journal of the Board of Agriculture.* This was opportune; he placed himself behind page 140, and with a big megaphone announced his withdrawal from the conflict, challenging Mr. Bliss to continue his argument against the Board of Agriculture, or with its champion writer on entomological pests. All this is very good fencing, and he exhibits some clever swordsmanship. But in quoting from page 140 he happens to have omitted the word "supposed," which makes all the difference. Mr. Shea thus gives himself entirely away: he makes a statement of fact of what the *Journal* puts forward as a supposition. Personally, I prefer the statement of Mr. Bliss on this subject to that of either Mr. Shea or the *Journal of the Board of Agriculture.* May I, in conclusion, point out that in the article quoted, or misquoted, by Mr. Shea, there are no fewer than fourteen different interjections, such, for instance, as "supposed," "it seems," "it is said," etc., where the writer is using unconfirmed matter, and dare not stake his reputation on its reliability. In such circumstances it is remarkable that Mr. Shea should allow himself to be led into error. The Board of Agriculture would do well to delay publication until definite results have been obtained, rather than to issue contributions to which attaches so much uncertainty. *Geo. St. Ox.*

THE SOURCE OF YELLOW ROSES. In *Beyond the Pir-Panjal*, by E. F. Neve, M.D., the author says :—"The wild Roses of Kashmir are famous. They are yellow, white, and every shade of red and pink. The double yellow Rose occurs in hedges, and is a very characteristic Kashmir flower. It has a peculiar perfume." What is this double yellow Rose? Again he says :—"The petals of another charming single Rose are terra-cotta inside and primrose outside." Is this the so-called "Austrian-Copper" at home? *White Rose* reduces our source of yellow Roses to two species—R. hemisphaerica and R. lutea—both from the Orient. May there not be others awaiting an intrepid collector in the Himalayas of Kashmir and Thibet? The above extract seems to give a promise of further finds, and not only of Roses, for the author is enthusiastic over the Kashmir Irises. *Western Wight.*

GROWING EXHIBITION SWEET PEAS.—When Sweet Pea plants are grown under natural conditions for garden decoration or for seed purposes but little disease is seen. When grown under special treatment for exhibition purposes plants frequently become unhealthy and failure results. We are apt to attribute all the blame to the altered system of manuring and so-called feeding. I suggest, however, that there are other causes which may be worth consideration. When grown upon "exhibition lines" plants are usually confined to one or two stems with all the side growths removed, the result being a greatly restricted leafage. When we consider the function of leaves in the economy of the plant it seems probable that this restriction of foliage may be the chief source of trouble. The two principal uses of leaves are to elaborate the carbonic acid gas of the atmosphere into organic substances and to transpire water; these are called assimilation and transpiration, which can only be accomplished by means of the rays of light acting upon the surface of the leaves, and healthy growth can only result when the amount of foliage is proportionate in extent to that of the roots. In other words, a green leaf is a manufactory in which the plant-food derived through the roots is compounded with the carbon accumulated by the foliage for the nutrition of all parts of the plant, including new growth, flowers and seed, the energy to do all the work being derived from light. It will thus be apparent how necessary both leaves and light are for plant nutrition, for without these the plant food derived through the roots would be unavailable and absolutely useless. When plants are grown naturally and the foliage is not restricted root action is proportionate to the leafage, but when the latter is restricted malnutrition follows. Taking into consideration these facts, my suggestion is that when plant growth is confined to one or two stems the amount of leafage should be increased by allowing nearly double the quantity of leaves to be grown upon each stem by leaving one leaf on each side growth (that is, by pinching the points of all side growths to one leaf). In this way an additional young leaf is left at each joint of the stem. This additional foliage may be expected to greatly encourage root action, increasing the size and improving the quality of the flowers and remaining available for supplying nutrition for the plant after the older leaves become tough and useless. This additional foliage may be beneficial even when plants are grown with two or three stems, because far more plant food is obtained from the atmosphere through the leaves than from the soil through the roots, besides which the various substances needed for nutrition and growth are manufactured in the leaves. We know how necessary light and air are for plant growth, how well plants succeed under favourable conditions of an abundance of light and air; also how failure comes under unfavourable conditions, such as crowded plantations, in shady places, and during dull days in winter. Now leaves absorb carbon through the stomata or minute pores of the leaves by the action of light, and this cannot take place under these unfavourable conditions, neither can it in the case of a deficiency of foliage, or at any rate not in sufficient quantity for healthy nutrition. *Robert Holmes, Tuckswood Farm, Norwich.*

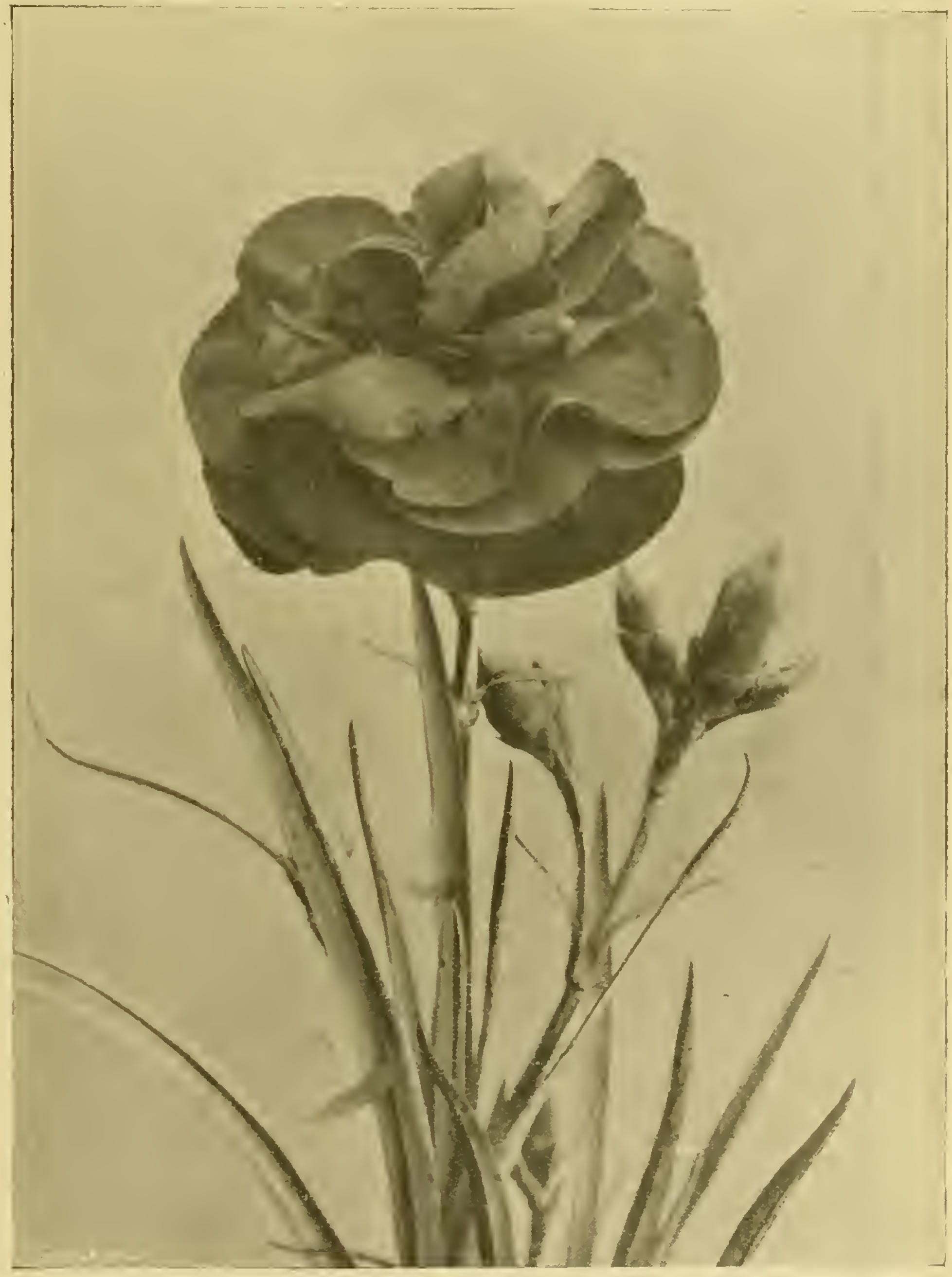


Fig. 7.—CARNATION GORDON DOUGLAS: A CRIMSON BORDER VARIETY.

(See R.H.S. Floral Committee's Awards, p. 16.)

Loiseleuria procumbens alba.—As I cannot find any record of the white variety of Loiseleuria (Azalea) procumbens, and others more competent than I have failed to find it mentioned, I may say I have collected this variety in Scotland this year. I had seen last autumn two plants with foliage and seed pods of a much brighter green than the ordinary variety. Accordingly, on May 29, I visited the spot, and found the plant in flower. The flower is similar to the pink form in size and shape, but pure white, and the foliage is quite free from the purple tinge. The altitude was about 2,300 feet. Owing to its age I fear the plant may suffer from its disturbance, but so far it is looking quite happy in the peat bed in my rock garden, and fresh growth is coming on well. A large plant of the pink variety collected last year is quite healthy, but failed to flower this spring. *G. Scott, Down Place, Guildford.*

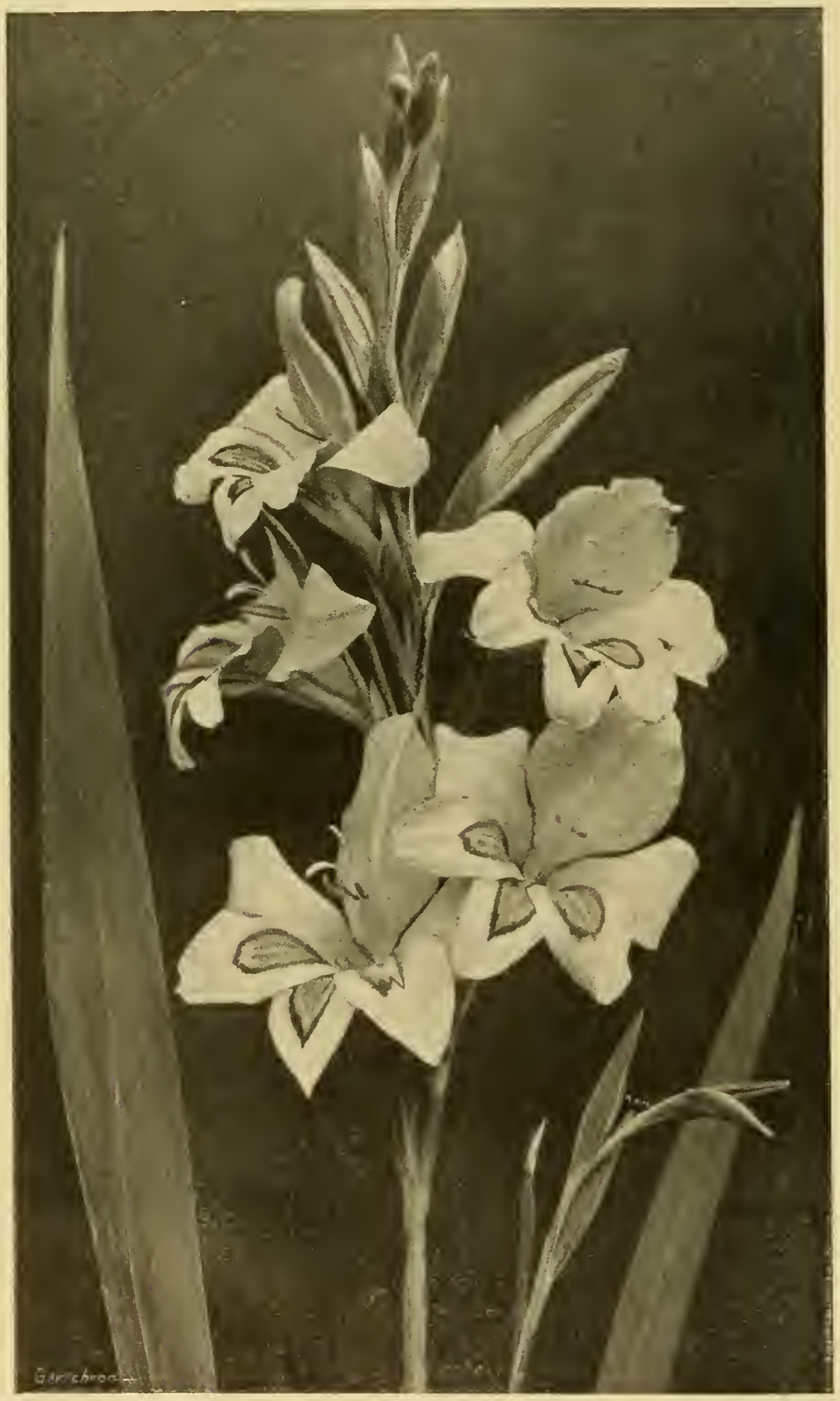


Fig. 8.—Gladiolus Mrs. Atkinson: colour of flowers salmon-pink, blotched with crimson.
(See R.H.S. Floral Committee's Awards, p. 16.)

Pyrus vestita—a Warning.—This fine Service tree, sometimes known among nurserymen as Sorbus nepalensis or magnifica, is the most ornamental of the genus known to me. About twenty years ago I planted one which is now 30 feet high. It was a graft on Hawthorn stock, which soon showed itself, but as the scion was set very low it was possible, after the Hawthorn shoots had been removed, to bank up the stem so that Pyrus was able to root itself. Being well pleased with the tree, which has splendid foliage, I purchased some others, well-looking, straight plants, but these, after some ten years' growth, are unable to develop their leaves. They are alive, but the leaves remain unfurled. The reason for this is that the Indian species has been grafted about 3 feet high on stocks of Rowan (P. Aucuparia), which, being a tree of much inferior capacity to P. vestita, is quite unable to meet the demands of the more vigorous species. The sap supply being stinted, the scion languishes and will soon die. Those, therefore, who wish to grow this most desirable Service tree will do well to protect themselves from disappointment by careful inspection of young plants before purchase. Fortunately P. vestita ripens seed freely in this country, which is the surest means of propagating it. The same may be said of the flowering Ash (Fraxinus ornus), of which I raised many from seed obtained from M. Rafn, and these have flowered this year. Every old specimen of this tree which I have examined in Great Britain has proved to be grafted on the common Ash. *Herbert Maxwell, Monreith.*

Queen Wasps at Dorking.—At my request Mr. Ranson sent me the wasps mentioned in his note (p. 435), to which some had been added, all having been caught by nine men and a boy in Holmbury Gardens, an area of about twenty acres, between early February and the end of May, on the flowers of black and red Currants and Gooseberries, and particularly on laurels. The results, compared with the batch from Tring (see Vol. LV., p. 423), are rather astonishing and serve to show the difference in local distribution of the several species. The following are the numbers :—

Queens.—Vespa germanica	104
Vespa vulgaris	337
Vespa rufa	1,364
Vespa sylvestris	68
Vespa norvegica	15
Vespa austriaca	—
Male.—Vespa germanica	1
	1,889

The overwhelming preponderance of V. rufa will be noticed and the comparatively small numbers of germanica and vulgaris, whilst one tree wasp (norvegica) is somewhat more numerous than at Tring, and the other (sylvestris) decidedly less. I am at a loss to account for the presence of the solitary male, since no males survive the winter, and can only conclude that it was caught last autumn and kept, perhaps with queens taken at same time, and thrown in with the rest. There were no workers in this consignment. *C. Nicholson, 35, The Avenue, Chingford.*

Young Gardeners.—A striking passage in the address which Sir Harry Veitch delivered to the Horticultural Trades Association recently, was one in which he referred to the difference in the young gardeners of to-day and those of former years. He regretted the lack of keenness and interest in their work displayed by so many. Sir Harry's words came vividly to my mind when reading the address delivered by Principal Whyte to the students at the New College, Edinburgh, at the close of last session. The Principal took for his subject "Thomas Boston and the Lessons of His Life." Thomas Boston was a famous old Scottish divine whose works had a great vogue in Scotland last century. One of his most famous works was called "The Fourfold State." Principal Whyte quoted what a famous Scottish minister—Dr. Andrew Thomson, of Edinburgh—said of that book. "'The Fourfold State' had found its way over all the Scottish Lowlands. From St. Abb's Head to the remotest point in Galloway, it was to be seen side by side with the Bible and Bunyan on the shelf in every peasant's cottage. The shepherd bore it with him, folded in his plaid, up among the silent hills; the ploughman in the valleys refreshed his spirit with it, as with heavenly manna, after his long day of toil. The influence, which began with the humble classes, ascended like a fragrance into the mansions of the Lowland laird and the Border chief, and carried with it a new and a hallowed joy." In those days the sons of such shepherds and ploughmen were the young men who recruited the ranks of gardening. The profession of gardening seemed to open up a career for them with greater prospects than that of their fathers, and thousands embraced it. Trained in such an atmosphere and endowed with "the power of work," can we be surprised that they impressed themselves on the mind of Sir Harry Veitch? He must have come across hundreds of them, because, true to the instincts of their race, they aye kept "handin sooth." *William Cuthbertson.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

FESTIVAL DINNER.

June 26.—The seventy-fifth anniversary festival dinner of the friends and supporters of the Gardeners' Royal Benevolent Institution took place on Friday, the 26th ult., at the Hôtel Métropole. The dinner was one of the most successful of the series, and we are pleased to announce that the sum of money obtained constituted a record. The chair was occupied by the Rt. Hon. the Speaker of the House of Commons, James Lowther, Esq. The Chairman was supported on the right hand by Lady Carl Meyer, the Rt. Hon. Lord Aldenham, Mrs. Holcombe Ingleby, Colonel the Rt. Hon. M. Lockwood, P.C., M.P., the Rt. Hon. Laurence Hardy, P.C., M.P., Mr. Holcombe Ingleby, M.P., Sir Ed. Stern, D.L., Sir John Jackson, C.V.O., M.P., Mr. Fred Hall, M.P., Mr. Samuel Samuel, M.P., Mr. Arnold White, Mrs. J. W. Campbell, Mr. N. N. Sherwood, V.M.H., Alderman C. A. Hanson, and Mr. Edward Sherwood. On the Chairman's left were Lady Colman, Sir Carl Meyer, Bart., Mrs. L. Salomons, Sir Jeremiah Colman, Bart., D.L., V.M.H., Sir Walter Smythe, Bart., D.L., Mr. L. Salomons, Lady Veitch, Sir Harry J. Veitch, V.M.H. (Treasurer), Mr. Geo. Gardner, Mr. W. M. Gibson, M.V.O., Mr. Arthur W. Sutton, V.M.H., Mr. and Mrs. Gordon Selfridge, Mr. and Mrs. Edward White, and Prof. F. Keeble, F.R.S.

THE RT. HON. JAMES W. LOWTHER, M.P., SPEAKER OF THE HOUSE OF COMMONS.

After the usual loyal toasts had been honoured, the principal toast of the evening, "Continued Prosperity to the Gardeners' Royal Benevolent Institution," was proposed by the Chairman. Mr. Lowther said that he had been busy during the past few days in deliberating on the Parliamentary Grants-in-aid, but he was sorry to say the Gardeners' Royal Benevolent Institution did not figure in the Finance Bill. Probably that was the reason he had been asked that evening to help to fill the void, and he wished to thank the ladies and gentlemen who had responded to his appeal on behalf of the Charity. The Institution during its seventy-five years had distributed £150,000, and during the past year had paid away about £5,000, to which Mr. Lowther humorously referred as the salary of a Cabinet Minister, and also his own very inadequate one. They had been told recently that the rich ought to be glad to distribute part of their annual income amongst the poor, and when the needs of gardeners were considered, and the enormous amount of time they spent at their labours, it was not to be wondered at that they were often in need of assistance. Mr. Lowther said he had communicated with the Registrar-General and asked him to supply him with some recent statistics. He was surprised to find that in 1901 there were only 211,000 gardeners, while in 1911 there were 258,000—an increase of 35 per cent. There was, however, a decrease in the number of women gardeners, the statistics showing that in 1901 there were 5,000, and in 1911 only 4,000 women gardeners. He was told that gamekeepers had increased in the decade only by 3 per cent. He felt he could predict that this increase was not likely to cease, and to give an illustration of the rapid strides horticulture had made during the last few years he might point out that some time ago, when attending a meeting of the R.H.S., it was difficult to find the Hall. Nowadays the difficulty was not to *find* the Hall, but to get into it! In conclusion, Mr. Lowther made an eloquent appeal for support for the Institution.

The toast was responded to by the Treasurer, Sir Harry Veitch, who thanked the Chairman on behalf of the Executive Committee for the able way in which he had proposed the toast, and also for the time he had given and the sympathy he had shown in being with them that evening. Sir Harry then gave some interesting details of the work the Institution was doing on behalf of gardeners, mentioning that candidates were admitted at sixty years of age, provided they were incapable of doing work. At the present time the Institution was maintaining 267 pensioners, of whom 155 were men and 112 women. The oldest pensioner, who was receiving help from the Victoria Era Fund, was 100 years of age. Her husband had paid 25 guineas in subscriptions, and between them they had received £452. Other annuitants were aged 97, 93, 92, and 90. The youngest recipient was 47, and was suffering from paralysis. The Fund did not deprive pensioners of the privilege of a Government old-age pension, as they were allowed under the State scheme to add the pension to an income up to £30 a year. Sir Harry pointed out that they kept the management expenses as low as possible, and the members of the Committee gave their time to the Institution. He was glad to record that they had made steady progress, and since 1838 had distributed £150,000. At the first election only one candidate was elected, whilst the number elected this year was fifteen. Sir Harry said that he had pleasure in telling the company present that Mr. James Sweet had contributed £500 to the funds, and secured a further sum of £500 under the provisions of a will.

Sir Jeremiah Colman proposed "Horticulture in all its Branches," and the toast was responded to by Mr. Laurence Hardy.

At this point the Secretary announced that the donations amounted to £3,500, which, with the legacy, made a grand total of £4,000. The list of donations included the following:—

Messrs. Rothschild and Sons	£105	0	0
Messrs. Sutton and Sons	105	0	0
Mr. Arthur W. Sutton	21	0	0
Mr. N. Sherwood and Sons	100	0	0
Lord Mountstephen	50	0	0
Sir Frank Crisp	62	0	0
Sir Jeremiah Colman	52	10	0
Lady Colman	5	0	0
Sir Harry and Lady Veitch	52	10	0
Messrs. James Carter and Co.	52	10	0
Mr. Leopold Salomons	31	10	0
Mr. Anthony Waterer	25	0	0
Mr. Edward White	21	0	0
Mrs. White	5	5	0
Messrs. Webb and Son, Wordsley	21	0	0
Major George Churcher	20	0	0
Messrs. W. Wood and Son	63	0	0
Mr. H. G. Alexander	53	0	0
Mr. R. W. Wallace	31	10	0
Mr. A. Mackeller (Windsor)	25	0	0
Mr. R. J. Cuthbert	25	0	0
Mr. Bailey Wadds	21	0	0
Mr. E. F. Hazelton	9	7	0
Mr. David W. Thomson	20	0	0
Mr. J. McKerchar	15	0	0
Mr. J. O'Brien	18	18	0
Mr. W. J. Jeffries	15	15	0
Mr. J. W. Barr	15	15	0
Mr. John Heal	12	0	0
Mr. H. W. Nutting	12	12	0
Mr. Arthur Turner	11	11	0
Messrs. George Bunyard and Co.	11	11	0
Mr. F. Sander	74	0	0
Sir Arthur Markham	25	0	0
Mr. A. B. Wadds	11	0	0
Mr. G. H. Richards	10	10	0
Sir Carl Meyer, Bart.	10	10	0
Mr. Reginald Cory	10	10	0
Mr. Percival Etheridge	10	10	0
Mr. J. Vert	10	10	0
Messrs. Barr and Son	10	10	0
Mr. T. Lamb	10	10	0
Mrs. J. W. Campbell	10	10	0
Mr. E. Beckett	5	15	0

The following donors each gave £5 5s.:—Mr. W. A. Bilney, Mr. W. Y. Baker, Mr. H. B. May, Messrs. Anderson, Mr. T. N. Cox, Messrs. Cutbush and Son, Field-Marshal Lord Grenfell, Sir Walter Smythe, Professor Keeble, Mr. Walter Cobb, Mr. Donald McDonald, Mr. A. Dawkins, Mr. J. Jacques, the Gardeners' Company, Mr. J. F. McLeod, and the *Gardeners' Chronicle.*

Covent Garden tables, under Mr. George Monro, Mr. Joseph Rochford, and Mr. Geo. Monro, jun., realised £260, which included the following amounts:—

Mr. Joseph Rochford	£26	5	0
Mr. J. Sweet	26	5	0
Mr. A. Watkins	21	0	0
Mr. John Rochford	15	15	0
Mr. George Monro	21	0	0
Mr. E. Rochford	10	10	0
Mrs. George Monro	5	5	0
Mr. B. Rochford	5	5	0
Mr. George Monro, jun.	25	0	0

The list from Mr. W. O. Hiehle amounted to over £90, and included the following:—

Mr. D. Ingamells	£5	5	0
Mr. A. Bird	5	5	0
Mr. George Messer	5	5	0
Mr. A. E. Honnor	5	5	
Mr. Geo. Hiehle	5	5	0
Mr. J. Collingridge	5	5	0
Société Française d'Horticulture de Londres	5	5	0

The total, amounting to £4,000, included a munificent gift of £500 from Mr. James Sweet, and the additional sum of £500 allocated by Mr. Sweet on the estate of the late Miss Williamson.

The proceedings concluded with a hearty vote of thanks to the Chairman, this toast being eloquently proposed by Colonel the Rt. Hon. Mark Lockwood, M.P.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Seedling Cypripediums.—Seedlings of one year or more may need re-potting. Where the compost is in a good condition plants in single pots may be placed into larger receptacles without disturbing the roots, as this will entail very little check to growth. Hybrids of the green-leaved, winter-flowering sections require a little fibrous loam mixed with the potting materials; whenever loam is employed finely-broken crocks should be incorporated with the compost. Fill the pots to about one-third of their depth with material for drainage. Thrips are great pests of young Cypripediums, and where the houses are near to borders of hardy herbaceous plants or trees they are very liable to infest the Orchids, therefore constant watch must be kept to see that they do not increase, or they will cause the foliage to become disfigured. Small, dark marks such as might be caused by a pin-prick at the base of the young leaves are the first indication of the presence of thrips, therefore directly any spotting is observed take measures at once to destroy the insects.

Shading.—Many of the plants in the warm and intermediate houses have almost completed their growth and will be benefited with plenty of light. The shading, therefore, should not be of so dense a nature as hitherto, and it is an advantage to apply a thin shading of a permanent character over the roof-glass. Powdered whitening mixed with skim milk and a little salt and linseed oil will be suitable. The glass should be made quite clean before this mixture is applied and the work done on a dry day when the roof ventilators may be opened; with air in the house there will be no condensation of moisture on the glass inside to run through the joints and make streaks in the shading before it is dry. We find that a brush, such as is used for washing railway carriages, fastened on a long handle, is very handy for applying the wash. The advantage of this kind of shading is that from the present time onwards the roof blinds need not be used until late in the morning, and they may be drawn up very much earlier in the afternoon, without fear of the sun scorching the foliage; at the same time the plants will receive plenty of light.

Liquid Manures.—Large plants of Cypripedium of the winter-flowering section, Cymbidiums and Calanthes, which have filled their pots with roots, may be fed on one or two occasions each week with soot-water and weak liquid manure made from cow dung. As I have pointed out in a previous note, the situation of the garden and of the district must be taken into consideration in the treatment afforded Orchids, and it will be found that whilst manure will do good in some cases, in others it will have the opposite effect. If, therefore, the use of manure has not been practised before, the grower must apply stimulants with caution.

Pleione.—Plants of autumn-flowering species, such as P. lagenaria and P. maculata, are completing their pseudo-bulbs and the foliage will soon commence to decay. Remove the plants to a cooler and airy house, affording the roots only sufficient moisture to keep the stems plump. Examine carefully the foliage occasionally for the presence of red spider; sponging the leaves with a weak insecticide is the best remedy.

Miltonia vexillaria.—Plants of robust-growing species of Miltonia should be dipped in an insecticide as soon as they have finished blooming, placing them on their sides to allow the superfluous moisture to drain away, for it must not be allowed to accumulate in the axils of the leaves. If this is done the plants will be free of thrips during the short period before they start to grow again.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Allamanda.—Pinch out the points of the shoots when they have reached a suitable length, as this will throw further strength into the flower shoots. Strong-growing climbers such as Allamandas, when planted in well-drained soils, need frequent applications of liquid manure at the roots, as this stimulant gives increased size and substance to the flowers. Specimens that have been potted recently need to be watered with extra care, and they should be syringed freely.

Chrysanthemums and Pelargoniums.—Chrysanthemums that have been potted recently should be syringed several times daily in bright weather. The trusses of Zonal Pelargoniums intended for blooming in winter should be removed for the present. After the plants of Show Pelargoniums have finished flowering stand them in a sunny position out-of-doors.

Streptocarpus.—These plants are in full flower, and will be benefited by applications of weak soot-water and liquid manure at the roots. Remove the old flowers as they fade to prevent seeds forming, as this would exhaust the plants, thereby shortening the flowering season. Shift young plants raised in January into larger receptacles as they require increased root room. The majority of this batch will flower this season, but a selection of the best plants should be made for stock, and the inferior ones discarded. The compost used for potting may consist of three parts loam and the remainder equal portions of dry cow manure, leaf-mould and sand. Grow the plants in a temperature of from 55° to 60° and shade them from bright sunshine.

Camellia.—Specimens planted out should be afforded as much fresh air as possible. Examine the borders to ascertain if the soil is in a proper condition of moisture, and syringe the plants daily. Keep the leaves clear of scale insects and dirt by sponging them with soapy water. Specimens in pots should be hardened gradually, with a view to placing them in the open. Select a sheltered place out-of-doors, and plunge the pots in a bed of coal ashes, which will not only keep the roots moist without much watering, but save the plants from being blown down during times of high winds. If stimulants are required use weak soot water and liquid manure with an occasional dusting of concentrated fertiliser or bone-meal. Use the syringe freely.

Hard-wooded Plants.—Plants of Azalea indica (Rhododendron indicum) are completing their growth under glass, and when this is finished they should be hardened gradually and placed out-of-doors. Select a sheltered spot in partial shade, and plunge the pots in ashes. Feed the roots with weak soot-water and syringe the foliage twice daily. Late-flowering varieties should be stood out at a later date. Ericas should be afforded the same treatment as Azaleas. Genistas, Deutzias, Myrtles and Salvias should also be plunged in a bed of coal ashes out-of-doors to ripen their growths.

Euphorbia pulcherrima.—As soon as the cuttings have rooted remove them to a rather cooler house. When ready for potting the plants may be shifted into pots 4½ inches in diameter, the compost to consist of three parts loam and one part peat and sand. See that the ball of soil attached to the roots is moist before the work of potting is done, as it is not advisable to resort to watering after one good soaking until the roots have become re-established. Syringe the foliage two or three times each day and gradually accustom the plants to more light.

Souvenir de la Malmaison Carnations.—As the plants pass out of flower select some of the best specimens for layering. In the meantime, get ready a frame or some other structure where lights can be placed as required, and prepare some gritty soil for layering the shoots. Plunge the plants in a sloping direction to enable the shoots to be pegged to the ground conveniently. Prepare the layers, peg them to the ground, and water the soil freely by means of a rose can. Keep the frame closed for a week or so, but admit air gradually afterwards.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Parsley.—Beds of transplanted Parsley should be covered with a thin mulch of rotted manure, as there will then be no need to apply water. At the same time it must be remembered that the finest leaves are produced in soil only just fertile enough for the requirements of the plants, and this fact must be kept in view in applying the mulch. It will soon be time to make a sowing for the supply of this herb in early spring. Choose rather dry soil and a situation that is shaded from the direct rays of the sun early in the day. Thick sowing is a fault that must be guarded against.

Cauliflower.—A few seeds of Early London, Magnum Bonum, or other reliable quick-growing varieties, may be sown to raise plants for furnishing heads late in the autumn. It will save time if a few seeds are dropped at suitable distances apart, the seedlings to be thinned subsequently to one at each station, though I have sometimes allowed two plants to grow, and although these produce smaller heads they are generally more favoured for the table than the very large Cauliflowers ready earlier in the autumn.

Turnips.—In addition to Swedes for furnishing roots in winter, the old hard-fleshed Turnip Golden Ball is useful at that season, and can be successfully grown in one-third the space that is required by Swedes. The seeds may be inserted now or shortly; the seedlings should be thinned to 6 inches apart in the rows. Swedes will do all the better if a little soil is drawn up to them on either side.

Beans.—Where the tops of Broad Beans are infested with black aphis they should be cut off and the plants dusted with tobacco powder. A cheap insecticide for spraying Beans may be made by adding a quantity of paraffin oil to the household suds, which should be syringed freely over the crop.

Tomatos.—If Tomatos out-of-doors are allowed to carry three trusses this will be sufficient for a crop; in many instances this number of trusses has formed and the plants should be stopped just beyond the third inflorescence. Continue to remove all axillary growths as they develop and see that the plants are supported to strong stakes, for they will become very heavy with the weight of the fruits.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Vines.—The leaves of vines from which the bunches have been cut should be kept clean and healthy by syringing them with clear water both morning and evening. The inside borders must be kept in a fairly moist condition; let the watering be sufficient to reach the lowest roots. This condition must be maintained throughout the summer and autumn, until the foliage commences to ripen and drop, when water should be withheld until the time for the annual pruning and dressing of the vines and the renovation of the borders arrives. Admit an abundance of air to houses in which the fruit is ripe, keep the atmosphere dry: examine the bunches at intervals with a view to removing split or decaying berries. Vineries in which the Grapes are colouring should be kept very warm; at the same time admit plenty of fresh air, for if allowed to ripen too slowly, or in a low temperature, the berries will be wanting in flavour, neither will they keep so well as when ripened in a brisk heat. Water freely the roots of vines on which the berries are swelling, and periodically remove all lateral growths. The bunches of late varieties that are intended to hang on the vines during the autumn or winter should be well thinned, otherwise losses may occur later through berries damping. Ventilate carefully houses planted with Madresfield Court and Lady Downes varieties, or splitting and scalding of the berries may take place. In either case use plenty of fire heat and ventilate the house freely to prevent the least possible amount of moisture from condensing on the berries. It may become necessary to shade the vines lightly during times of very bright sunshine where the roof is glazed with 15 oz. glass, but shading is seldom required where 21 oz. glass has been employed, and the roof built at the right angle.

ORCHARD HOUSE.—Keep all pot trees supplied with moisture at the roots, and in addition to artificial manures afford an occasional application of manure-water to trees carrying heavy crops of fruit. Remove early Cherries that have been cleared of their crops from the house, and plunge their pots to the rims in a suitable medium out-of-doors; this timely treatment will facilitate the thorough ripening of the wood, and the consequent maturation of the buds for the production of the next season's crop. Ventilate the house early in the morning and during warm nights. Trees that have not yet ripened their fruit should be syringed freely twice daily.

PEACHES AND NECTARINES.—In houses in which the crops have been gathered, syringe the foliage with clear water daily. The ventilators should remain fully open, and the glass kept free from dust and dirt, so that plenty of light may reach the trees. The partial removal of old or unnecessary shoots may now take place, leaving only a little more growth that will be required to furnish the next season's crop. It sometimes happens that some of the shoots start into growth a second time, but as this invariably happens upon growths that are over-luxuriant, the consequences are very trifling, and may really do good as an outlet for the surplus sap. As the season advances let the leaves fall naturally and not brushed off as is sometimes done.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

SUMMER FLOWERING BULBOUS PLANTS.—Various kinds of Gladiolus, Hyacinthus (Galtonia) candicans, and Watsonia Ardernei are sending up their spikes, which should be supported to neat stakes. Gladioli of the early-flowering section, such as The Bride, delicatissima and Peach Blossom, are very promising this year for a good display of flowers, as are also the later kinds, including Brenchleyensis, Groffs hybrids, America, Hollandaea, and princeps, all of which are splendid for supplying cut blooms. The flower-buds open in succession when the spikes are placed in water, so that the cut sprays remain attractive for a long time. In flower beds Gladiolus Baron J. Hulot associates well with Watsonia Ardernei, whilst the dark varieties of Gladiolus are very handsome when grouped separately. The Tigridias, too, are most beautiful plants, and although the flowers are very fugitive, fresh blooms open daily, so that a closely-planted bed is very attractive in summer; these plants will grow admirably on a hot, dry bank.

HARDY CYCLAMEN.—The present month is the best time for planting hardy Cyclamens in grass, and they will grow in the partial shade of trees, if it is not too dense. They do well with Ferns, which afford just sufficient shade to suit them. In preparing the site for planting employ plenty of old mortar and a quantity of humus, such as well-rotted leaf-mould. With the exception of C. europeans the corms of all the species should be planted shallowly. The Ivy-leaved Cyclamen, C. hederaefolium, is the best all-round species for massing, and it may also be employed as a groundwork for such spring bulbs as Scillas, Chionodoxa, Muscari, and Galanthus (Snowdrops). The foliage of the Sowbread shows up the bright flowers of the other subjects, besides furnishing the ground between them.

ALSTRŒMERIA.—The shoots of these plants should be kept well thinned, removing all weak and superfluous ones as often as is necessary. Place twiggy shoots amongst the plants for support or they may become damaged by storms. It is not advisable to disturb the roots of Alströmerias frequently, but old clumps send up a great number of shoots, hence the need for thinning them. A. aurantiaca and A. lutea are the easiest species to cultivate, although A. psittacina is not a difficult garden plant; the blooms of all three species last well when cut and placed in water.

LILIUM.—During recent years Lilies have been greatly troubled with some pest, and their cultivation has been extremely difficult. The trouble has been most pronounced in soils bordering on clay, probably because heavy land militates against the ripening of the bulbs.

THE "FRENCH" GARDEN.

By Paul Aquatias.

MELONS.—The warm weather during June has been all that could be desired. Ventilation could be given freely from 6 a.m. till 7 p.m., and left at night on several occasions. The plants set up to May 10 are now setting their fruits, and watering can be done more liberally—about three times weekly—while the weather is genial. For commercial purposes it is preferable to keep only two or three fruits on each plant, they must be even in size, of regular shape; and as far from the collar of the plants as possible. With the swelling of the fruits the growth of the wood will diminish, but the stopping to one leaf of all shoots and the thinning of overcrowded parts must be done regularly once a week, so as not to check the growth unduly, which would be the case when pruning at too long intervals. The first beds, planted early in April, will soon contain ripe fruits. It is essential to turn them over periodically, so that they may ripen evenly; and they should be exposed to the full sun by removing all leaves growing round them.

CROPS OUT-OF-DOORS.—When the Cauliflowers from the manure beds have been marketed, the ground should be forked over, and two or three beds thrown into one for setting the main batch of White or Winter Green Celery. Previous to transplanting, all plants are to be examined, and any maggoty or diseased leaves removed. If any such are found it is advisable to dip the plants, as a preventive measure, in a solution of 1 part copper sulphate and 100 parts water. The plants can be set 10 inches apart in the row, and 1 foot between. Radish or Spinach may be sown broadcast, or a row either of Cos Lettuce or Cabbage Lettuce can be planted between each row of Celery. These extra crops do extremely well, owing to the ample nutrition available and the frequent waterings required by the Celery. They are ready early in August, when salading is generally scarce. Cauliflowers could be planted as a main crop 18 inches apart each way, but it is not so profitable as Celery owing to the heavy crops to be obtained from the field. The batch of Cauliflowers from the Cloche beds are now ready, and the plants must on no account be dry at the roots. A good drenching once a week is more advantageous than superficial waterings given more frequently. The ridge Cucumbers will now be established in their new quarters. Before the stems cover the ground the crop will greatly benefit by a good mulching. This helps to retain the natural moisture of the roots, and the fruits grow more evenly both in size and in colour. The growth is uncertain until the end of July, and extra attention is well repaid by the quantity of fruits early in August, when the best prices are obtained. The first batch of Endives is ready for blanching. This can be done either by covering each plant with a 6-inch pot or by tying. The latter method is preferable as the centre is not so liable to decay if tying is resorted to. A heavy watering should be given the previous day, and as soon as the leaves are dry they should be gathered together and tied loosely. As Endives take 10 to 12 days to blanch, only what can be disposed of is tied as required. Vegetable Marrows have now been bearing fruits for a fortnight, and will produce a constant succession until the frosts. Owing to the fragility of the outer skin, the packing of this crop has to be done very carefully. Each fruit should be separately papered, and dry hay or straw placed between each layer of fruits. The marketing of Carrots and Turnips from the open ground has just commenced, and these crops will be remunerative this season owing to the failure of the field crops, due partly to the late frosts, and partly to the hot weather in April. In the gardens where sufficient quantity of Witloof Chicory has been sown direct, thinning has now begun. If transplanting is contemplated, this operation can be delayed until the plants are of sufficient size to be set in their permanent quarters. As soon as the Tomatos have shown two or three trusses the plants should be stopped one leaf over the last truss. Feeding should be resorted to fortnightly to ensure heavy fruits. The main batch of Endive should now be sown for winter use. The curled variety seems to be losing favour among growers, and certainly the Batavian (or plain leaf) variety is hardier, keeps for a longer period, and can stand ordinary frost, which renders it crisper and more tender. The first sowing should be made about July 5, and the second a week later. The plants are not to be pricked out until set in their final quarters; and seeds should be inserted very thinly.

CUCUMBERS.—Ventilation can now be given over a longer period; and as the plants are growing more freely, the soil must be kept in a moist condition. In the case of such prolific varieties as Rochforts and Covent Garden it is necessary to thin the fruits when they are 3 or 4 inches long, keeping only those of straight and even shape. The fruits growing on the leader should also be disregarded, as they weaken the growth.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

STRAWBERRIES.—Although these gardens escaped the severe frosts which were experienced in many parts of the country when Strawberries were in bloom, our plants have suffered from drought, and many of the berries on early varieties did not develop, the early crop being quickly over. The present season has shown the advantage of placing the litter along the rows early, for, acting as a mulch, it is of great value in helping to retain moisture in the soil. The new variety, King George V., is under trial here; it was a few days earlier when forced than Royal Sovereign. The berries are soft and not likely to travel well when packed; but the plants are very healthy and have a vigorous constitution. The later varieties, including Givon's Late Prolific, Waterloo, Fill Basket, Latest of All, and Laxton's Latest show great promise for a splendid crop, but if drought continues the roots will need watering or many of the berries will shrivel.

STRAWBERRY RUNNERS.—It is usual to plant Strawberry runners in the autumn, and autumn-planted Strawberries should not be allowed to fruit the following season. But they may be allowed to develop runners, which make splendid plants for forcing, there being no fruits to exhaust the energies of the parent plants. The work of securing the plantlets should be commenced as soon as they are sufficiently advanced. A convenient method, and one usually followed, is to layer them into small pots, which enables them to be removed from the bed at an early date, to be either planted out or potted for forcing. The compost for layering may consist of sweet loam mixed with a little manure from a spent mushroom bed and a small quantity of bone-meal. It is not necessary to crock the pots—some of the rougher particles of loam or dung placed in the bottom will be all that is necessary in this direction. Pegs may be used for layering or the runners may be kept in position by placing stones on them. It is not recommended to use excessively rich soil, for though the plants might grow very fast and make large leaves in a rich compost, they would not be so suitable either for potting or for planting in beds as more compact specimens. The ideal runner is one with a stout, single crown, moderate leaf stalks and a good root system, for such plants ripen well in the autumn and fruit well the following season. During dry weather damping the plants overhead in the evening will encourage the development of roots. Only a few runners should be secured from each plant and the others cut off.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselres responsible for any opinions expressed by their correspondents.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 7—
Nat. Rose Soc. Sh. at Botanic Gardens, Regent's Park. Wolverhampton Floral Fête (3 days). Scottish Hort. Assoc. meet.

WEDNESDAY, JULY 8—
Elstree Hort. Soc. Sh. West Surrey Hort. Soc. Sh. at Camberley. Weybridge Fl. Sh.

THURSDAY, JULY 9—
Finchley Hort. Sh. Potters Bar and Dist Sh.

FRIDAY, JULY 10—
Bury St. Edmunds Sweet Pea and Rose Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.4°.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, July 1 (6 p.m.): Max. 90°; Min. 65°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, July 2 (10 a.m.); Bar. 29.8; Temp. 74°. Weather—Dull.
PROVINCES, *Wednesday*, July 1: Max. 86°, Bath; Min., 50° Scarborough.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—
Sale of the first portion of the Marlfield Collection of Orchids, at "Marlfield," West Derby, Liverpool, by Protheroe and Morris, at 1.

FRIDAY—
Established Orchids and Dwarf Japanese Trees, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 12.45.

Experiments with Bacterised Peat.

The results obtained by trials of bacterised peat at Kew and elsewhere (see *Gardeners' Chronicle*, Vol. LV., pp. 204, 454) have created a widespread interest, and have led to series of further trials, which are being made at the present time in different parts of the country. Of these experiments those undertaken by Messrs. Sutton and Sons at their trial grounds at Reading have been planned on a comprehensive scale, and carried out with great care. Inasmuch as many of the experimental plants have not yet completed their growth, it is not possible at the present time to sum up the whole of the results which have been obtained. Nevertheless the results in certain cases are so definite that it appears desirable to put them on record now. Messrs. Sutton and Sons' experiments fall into two series. In one series the manurial value of bacterised peat has been tested on plants growing in the open ground, and in the other on plants growing in pots and boxes.

In the open ground series of experiments the plants under experiment have not been watered, whereas the plants growing in boxes or pots have received regular supplies of water. To appreciate the results which have been obtained this fact must be borne in mind, as must also the cognate facts that the period during which the plants have been growing has been one of extreme drought—only one heavy rain and a few light showers having fallen—and that the soil in that part of the Reading Trial Grounds in which the experiments were carried out is both light and poor.

The procedure adopted in the open ground experiment is as follows:—

A piece of ground was divided up into five strips—A, B, C, D, E, each of which was treated in one or other of the following ways:—

A. Control: no manure.

B. Top-dressed with Professor Bottomley's bacterised peat at the rate of 8 oz. per square yard.

C. Farmyard manure dug in at the rate of half a barrow-load per 10 square yards, and also—after the plants were up—a top dressing of bacterised peat, 8 oz. per square yard.

D. Ordinary peat together with sulphate of ammonia—8 oz. per square yard.

E. Farmyard manure dug in, and ordinary peat moss soaked in sulphate of ammonia, 8 oz. per square yard.

The strips A—E were divided crosswise each into plots of 10 square yards, and each of these plots carried one of some thirteen different crops, including: Potatos, Peas, Onions, Turnips, Mangels, Cabbage, various Clovers, Alsike, Lucerne, Sanfoin, Grasses, Bartonia aurea, Acroclinium, and Nasturtium.

The relative amounts of growth of these several crops on the different strips were inspected and recorded on June 26. The informal jury which made the inspection consisted of Mr. Martin H. F. Sutton, Mr. Giles (who had carried out the experiment), Professors Bottomley and V. H. Blackman, and ourselves. In the case of each plant, say Potato, the A, B, C, D and E plots were put in order of merit. In order to express the results succinctly and concretely marks have been assigned to the plots: 5 for first, 4 for second, 3 for third, 2 for fourth, and 1 for last plot. Summing up the marks we get in order of merit:—

Plot C, 61 (out of a possible 65); plot E, 57; plot B, 39; plot A, 36; plot D, 34.

As practical gardeners will have divined already the winners in the competition are the plots which received dung—C and E. The plot (C) which received bacterised peat as well just beats that on which the dung was supplemented by untreated peat moss soaked in sulphate of ammonia Plots C and E, however, are so close that it is not possible to assert confidently that the addition of bacterised peat is responsible for the small difference between them. Similarly, though plot B, which received bacterised peat, stands 3rd, it is so near plots A and D that no certain inference can be drawn as to any beneficent effect produced by the dressing (8 oz. per square yard) of bacterised peat.

Nevertheless, the experiment deserves to be put on record if only because it shows in emphatic manner that there was a limiting factor at work: that is to say, a factor which controlled and determined the growth of the crop and overmastered all other factors making for luxuriant growth. That factor is evidently the restricted water supply. When, however, we turn to the second series of experiments, in which artificial watering compensated for lack of rain, very different results are to be observed. For example, in the first experiment of this series Lettuce and Radish were grown in garden soil and watered with one or other of the following: Water only, guano water (1 oz. per gallon), water extract of bacterised peat. The yield in the case of Lettuce showed (in 47 heads) an advantage of 2½ lbs. in favour of bacterised peat, the actual numbers being: Bacterised peat, 47½ lb.; guano water (1 oz. to 1 gallon), 44½ lb.; water only, 45 lb. With Radishes the yields obtained by the use of guano "water" and bacterised peat both show about an equal, albeit small, increase over that obtained with water only; the numbers being (for 307 roots in each case): Guano water, 6 lb. 15 oz.; bacterised peat, 6 lb. 14½ oz.; water only, 6lb. 8 oz. In a second experiment, Radishes—chosen because of the readiness with which the growth and weight of the experimental plants may be compared—were grown in pots with ordinary pit sand. Each lot of 8 pots was watered (1) with water only, (2) with water extract of bacterised peat, (3) with guano water. The yields obtained by guano and bacterised peat extracts are nearly equal, and, of course, greater than that given when water only was applied. The weights are: Guano extract (tops), 2 lb. 2½ oz., (roots), 1 lb. 5 oz.; bacterised peat extract (tops), 1 lb. 14½ oz., (roots), 1 lb. 5½ oz.; water (tops), 1 lb. 2 oz., (roots), 12 oz. Here the advantage of guano over bacterised peat extract is pronounced.

In a third set of this series Radishes (96 per box) were grown in ordinary soil in boxes 1 yard square and treated as indicated in the following table:—

	Roots. lb.	Roots. oz.	Tops. lb.	Tops. oz.	Total Weight. lb.	Total Weight. oz.
Control.						
Two boxes (average)	0	11	0	8½	1	3¼
Farmyard manure, small dressing	0	12	0	12	1	8
Guano (½ oz. before sowing and ½ oz. top dressing)	0	14	0	8½	1	6½
A well-proved fertiliser (1½ oz. before sowing and 1½ oz. top dressing)	1	0	0	11	1	11
Nitrolim (3 oz. per box before sowing)	1	3	0	12	1	15
Bacterised peat (4 oz.)	1	8½	0	13½	2	6
Bacterised peat (8 oz.)	1	5	0	11	2	0

The result is remarkable in several ways. It shows, first, that bacterised peat is of high manurial value; second, that the increase affects both roots and tops (leaves) but the former more than the latter; and, third, that—as has been observed in other experiments—a lighter dressing of bacterised peat is somewhat more effective than is a heavier dressing. Incidentally, the experiment goes to show that nitrolim—containing, as it does, both nitrogen and lime in combination, is a fertiliser which deserves a good trial on garden crops.

To sum up: The thorough and careful experiment carried out by Messrs. Sutton

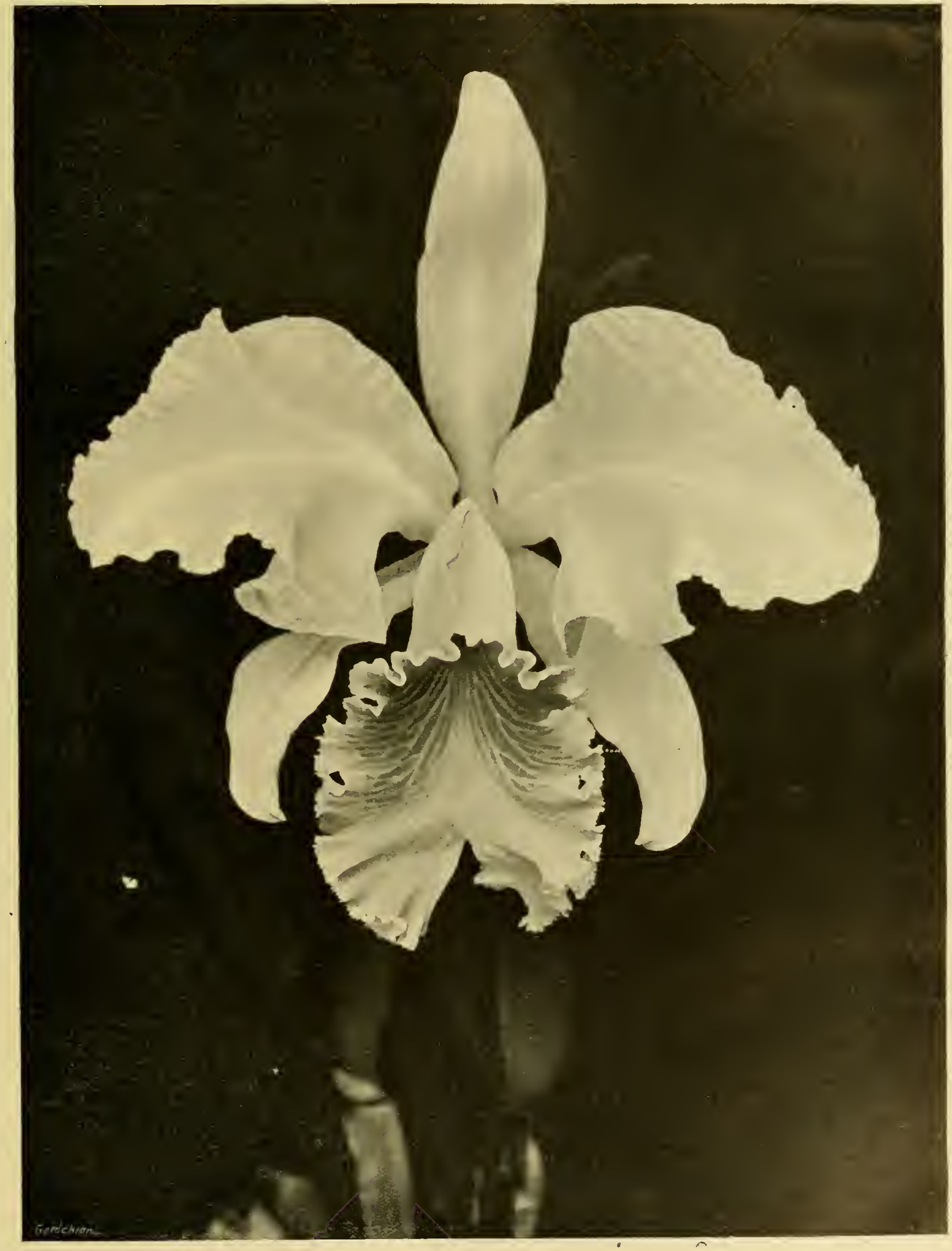


FIG. 9.—CATTLEYA IRENE. EXHIBITED AT THE HOLLAND HOUSE SHOW.
(See Awards by R.H.S. Orchid Committee, p. 15.)

leads to the conclusion that whereas bacterised peat, used in the relatively small quantity in which it can be used effectively, does not appear to exercise a beneficent action on the water-holding capacity of the soil, it has valuable manurial properties, and these properties do not appear to be limited to the provision of nitrogen.

Those who have most experience with the carrying out of experiments will be most careful not to attach undue weight to any single experiment. More trials are wanted before a final pronouncement can be made as to the manurial value of bacterised peat. Nevertheless, the evidence obtained by Messrs. Sutton confirms and extends the results reached by the earlier experiments at Kew and elsewhere, and gives ground for the conclusion that bacterised peat is destined to prove of value to horticulturists.

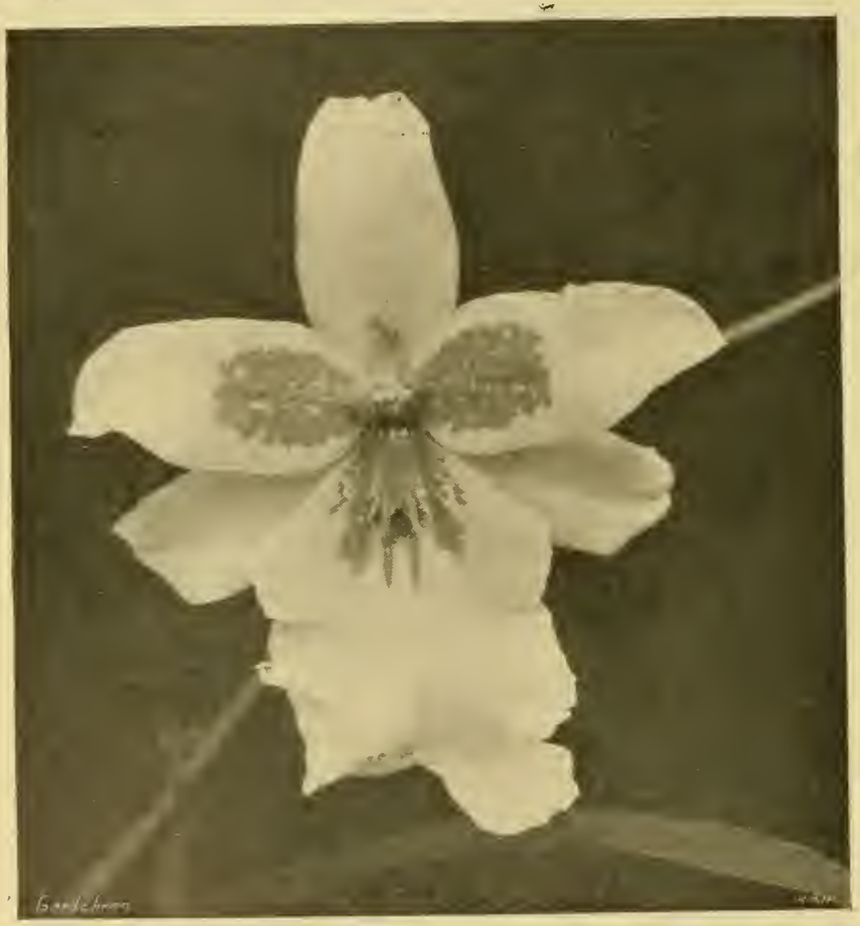


Fig. 10.—Vuylstekeara insignis: flowers cream-white with brownish spots.
(See R.H.S. Orchid Committe's Awards, p. 15.)

Into an account of the experiments which Messrs. Sutton and Sons are conducting with radio-active substances we cannot now enter; suffice it to say that so far as those experiments have yielded results it does not appear that the influence of these substances is very considerable.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Clerodendron splendens.

Horticultural Club: Annual Excursion.—The Horticultural Club will have its annual excursion on Wednesday, July 15, when the members and friends will visit Hatfield House, the seat of the Marquess of Salisbury, G.C.V.O., and Balls Park, the seat of Sir George Faudel Phillips, G.C.I.E., The journey to and from Hertfordshire will be made by motor-car. Particulars may be obtained on application to Mr. R. Hooper Pearson, hon. sec.

National Rose Society's Show at Regent's Park.—We regret that in the last issue, owing to an oversight, the date of this show was given wrongly as July 4. The correct date, namely, Tuesday, July 7, was announced under "Appointments."

Conferences at the White City.—We are informed that the Border Carnation and Gladiolus Conferences, which were intended to be held at the Anglo-American Exhibition at Shepherd's Bush, on July 18 and August 12 respectively, have been abandoned.

Mrs. Villiers-Stuart.—Those who were present at the Horticultural Club recently when Mrs. Patrick Villiers-Stuart gave her address on "Indian Gardening" will be pleased to know that the Royal Society of Arts has awarded Mrs. Villiers-Stuart the Society's Silver Medal for her work in connection with the subject of the lecture.

Annual Excursion.—The annual excursion of Messrs. Sutton and Sons took place on Friday, June 26. The places visited were Ramsgate and Margate. Two trains were chartered, the first leaving Reading at 7 a.m., and the second following fifteen minutes later. Arrived at Margate Sands station, the excursionists dispersed in various directions, some visiting Ramsgate, Broadstairs, Birchington and Westgate, while others preferred to stay in Margate and Cliftonville to take advantage of the many amusements which these popular seaside resorts offer. The trip to Westgate was especially attractive, as the Admiralty had stationed here some half-dozen seaplanes, and several flights were made during the day. The first train left at 7.5, and the second at 7.25. Reading was reached at 10.35 and 10.55 respectively. The party numbered nearly 1,000, being reinforced by the staff from the new trial grounds at Langley. Among the members of the firm who travelled with the party were Mr. Leonard Sutton and two of his sons, Mr. and Mrs. Martin H. F. Sutton and family, and Mr. and Mrs. E. P. F. Sutton.

Scholarships in Agricultural and Veterinary Science.—The Board of Agriculture and Fisheries propose to award the following scholarships, tenable for three years from October 1 next. Three Agricultural Science Scholarships of the value of £150 per annum, open to students who have graduated with honours in science at a British University. Candidates will be required to produce evidence of high proficiency in one of the sciences—chemistry, botany, zoology, or physiology—and to give an undertaking that they will study one of these sciences in its applications to agriculture at institutions approved by the Board. Two Veterinary Research Scholarships of the value of £150 per annum, open to students who have obtained the diploma of the Royal College of Veterinary Surgeons. Scholars will be required to prosecute research in veterinary science in institutions approved by the Board. Three Veterinary Scholarships of the value of £100 per annum, open to students who have graduated with honours in science at a British University, and tenable for three years at a veterinary college in the United Kingdom. Applications for any of the foregoing scholarships must be made not later than July 17 on a form to be obtained on application from the secretary, Board of Agriculture and Fisheries, Whitehall Place, London, S.W.

Tobacco-Growing in Morayshire.—A report has just been issued by Mr. Alexander Pardy, the representative of the Aberdeen and North of Scotland College of Agriculture in Morayshire, of his last year's experiments in Tobacco-growing in that county, for the purpose of gaining information as to the likelihood of the plant being suitable as a crop in the district. Four varieties, viz., Copper King, Yellow Prior, Improved Prior, and Irish Gold, were raised by Mr. Wiseman, The Nurseries, Elgin, who undertook the rearing under heat, and hardening off before finally sending them out to the experimenters. About 250 plants were distributed between four farms—Myreside, Dyke, Wester Alves, and Wester Kintrae—where they were grown mostly under field conditions on clean land. An extended period of very dry weather prevailed just after they were planted out, and, as no particular care was taken of the young plants, they made poor progress. Where they were planted in well-prepared and richer soil they did capitally, and sufficient evidence was forthcoming that with good care and management they are likely to succeed in the district. At Myreside 13 plants weighed 30 lbs. after being cut for 24 hours.

Fruit Crops in Holland.—The Board of Agriculture and Fisheries has received a report from H.M. Acting Consul-General at Rotterdam relating to the condition of crops on June 1, from which it appears that fruit does not promise to be abundant in Holland this year. Blossom was plentiful, but frosts, drought, and in some instances pests had occasioned much damage. Apples are good in most districts of Guelderland, in Walcheren and in Zealand, moderate in the Upper Betuwe, the provinces of Limburg and Groningen, and in the Westland, and fairly good in the south of Utrecht, around Nymegen and in North Brabant. Pears are moderate in the south and north of Limburg, South Boveland, in the Upper Betuwe and several other districts, and fairly good or very good elsewhere. Plums are fairly good in the Westland district, rather bad in the south of Limburg, and mostly satisfactory elsewhere.

ROYAL HORTICULTURAL SOCIETY.

Exhibition at Holland House.

June 30, July 1, 2.

THE Summer Exhibition of the Royal Horticultural Society opened on Tuesday last in the grounds attached to Holland House, Kensington, the residence of Mary, Countess of Ilchester, and continued for three days. On many occasions these Holland House shows have been marred by showery weather, but this year discomfiture was caused by the unusual heat. The thermometer all the week registered well above 80°, and on Thursday there were some reports of 90° in the London district. The great heat served not only to wilt and wither the exhibits, but to make an inspection of the tents a discomforting undertaking. The show itself was a magnificent success, being the best of the series. It opened auspiciously, for amongst the first visitors were Queen Alexandra, the Dowager Empress Marie of Russia, and King Manoel of Portugal.

The splendid exhibit of Japanese Irises shown by Messrs. Wallace on the banks of a water garden was awarded the Coronation Cup offered for the best exhibit in the show. The fruit trees in pots were of more outstanding merit even than usual, and Orchids were as good as we have seen them at this show, which is held too late in the season to equal Chelsea. Roses, Carnations, and most other cut flowers suffered from the tropical conditions, but Sweet Peas seemed but little affected. Ferns and Stove Plants in pots were quite at home in the great heat, and the former were especially good. There was a vast wealth of all kinds of hardy plants and flowers, and one or two rock gardens.

A special tent was devoted to the display of horticultural sundries, as insecticides, washes, and the like are termed.

Although everything appeared to pass so smoothly, it must be remembered that these great shows involve a vast amount of extra work and responsibility, and the thanks of all are due to the Secretary, Rev. W. Wilks, and his assistant, Mr. Gaskell, the Superintendent, Mr. S. T. Wright, and the members of the office staff, including Mr. Frank Reader.

Orchid Committee.

Present: Sir Harry J. Veitch (in the chair) and Messrs. Jas. O'Brien (hon. secretary), F. J. Hanbury, J. Wilson Potter, W. Bolton, F. Sander, W. H. White, R. Brooman White, S. W. Flory, W. H. Hatcher, A. Dye, J. E. Shill, J. Cypher, W. Cobb, R. G. Thwaites, A. A. McBean, H. G. Alexander. Stuart Low, E. Ashworth, G. F. Moore, W. P. Bound, R. A. Rolfe, C. Cookson, and Sir Jeremiah Colman, Bart. Thirty plants were entered to go before the Committee, which resulted in 10 Awards.

AWARDS.

First-Class Certificate.

Cattleya Irene (*Suzanne Hye de Crom* × *Mossiae Wageneri*) (see fig. 9), from J. Gurney Fowler, Esq., Pembury (gr. Mr. J. Davis). One of the finest of white Cattleyas, the flower, notwithstanding that the plant which bore it was very small, being large and of fine shape, pure white with chrome-yellow markings in the lip.

Miltonia vexillaria illustris, from Messrs. Sander and Sons, St. Albans. One of the superb seedling forms raised by the firm. The handsomely-shaped flowers were of a soft, rosy lilac, with a striated, red mask at the base of the lip, the lines radiating into the front.

Odontonia Cleverleyona (*M. vexillaria Leopoldii* × *Odm. Rolfeae*), from Messrs. Mansell and Hatcher, Rawdon, Leeds. A most remarkable cross, with the flowers flatly arranged as in Miltonia, white, evenly spotted with bright rose and having a mask of red lines at the base of the lip.

Awards of Merit.

Cattleya Warscewiczii Meteor, from Lieut.-Col. Sir Geo. L. Holford, K.C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A grand flower, the broad, deep-rose sepals and petals extending 8 inches, the proportionately large labellum intense ruby-crimson with light-yellow disc in the centre.

Odontoglossum eximium Solum, from Messrs. Charlesworth and Co. A very showy Odontoglossum of fine shape, the flowers being clear claret-red, with a silvery-white margin.

Odontoglossum Invincible (*Denisoniae* × *eximium*), from Messrs. Sander and Sons. A superb flower, and one of the largest. The segments were heavily blotched with dark violet, the white ground colour showing through the blotches and at the margins.

Miltonia Sanderae var. Enchantress, from Messrs. Sander and Sons. A most delicately tinted flower, the colour being soft carmine-rose on white, the mask having thin orange-red lines.

Laelio-Cattleya Aphrodite Our Queen, from Messrs. Stuart Low and Co., Jarvisbrook, Sussex. Flowers large, the petals very broad, pure white, the finely expanded labellum deep violet-crimson.

Vuylstekeara insignis (*Miltonia Bleuana* × *Odontioda Charlesworthii*) (see fig. 10), from M. Firmin Lambeau, Brussels. A most remarkable cross adhering in form to Miltonia. Flowers cream-white, with a line of brownish spots in the petals, and a radiating mask of lines on the lip.

Renanthera pulchello, Rolfe, from Monsieur A. A. Peeters, Brussels. A singular plant imported with R. Imschootiana and like a rudimentary form of it. The branched spike bore numerous small yellowish flowers tinged with red and bearing red spots at the tips of the petals.

Groups.

The groups of Orchids occupied the central stage running from end to end of the large tent. In reviewing these it must be remembered that there are fewer subjects available for midsummer shows than at the May shows; also that small-flowered species are of little use to give character to the groups, consequently throughout most of the exhibits the main features are given by Laelio-Cattleya Canhamiana in great variety, with a smaller number of L.-C. Aphrodite and allied hybrids. In Cattleyas the species of the show is C. Warscewiczii Sanderiana, which in size, fine colour, and good shape leaves nothing to be desired, and its floriferous character saves it from the reproach of being shy-flowering, which some other sections bear.

Lieut.-Col. Sir Geo. L. Holford, K.C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), staged a beautiful group, well sustaining the excellence of Westonbirt Orchids. The centre was of very lightly-arranged, deep-red Renanthera Imschootiana overhanging the drooping white racemes of Thunia Marshalliana, and beside them were excellent clumps of Vanda teres, two Aërides odoratum which had been at Westonbirt in the early days of the collection; Anguloa Cliftonii, and other showy species; Miltonia vexillaria and hybrids, and a good selection of Odontoglossums. But the group was dominated by the many superb forms of Cattleya Warscewiczii, some 30 plants of which were shown, each with a good proportion of blooms and ranging from the richly-coloured varieties, Meteor, Monarch and Low's variety, to the large, pure white C. Warscewiczii alba Firmin Lambeau, which is famous as securing a Gold Medal and First-Class Certificate at the Royal Horticultural Society, July 16, 1912, a fine plant of it with five flowers being now shown. Cattleya Dupreana was represented by four specimens, the best of which was Westonbirt variety; C. Herode and other hybrid Cattleyas; four varieties of L.-C. Lustre, including the dark variety Budda. The Brasso-Cattleyas included B.-C. Euterpe, a distinct form raised at Westonbirt; and of Sophronitis crosses Sophro-Laelio-Cattleya laeta was present in three pretty specimens. Laelio-Cattleya Corncrake (Gwennie × Mossiae Reineckiana) was a distinct novelty. (Silver-gilt Cup.)

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Collier), staged an effective group including slender Oncidiums, with hybrids of Odontoglossum Edwardii, Epidendrum O'Brienianum, E. Boundii in the higher parts, on each side fine Odontoglossum crispum and hybrids, many of which were raised at Gatton. Very effective in the group were batches of scarlet Odontiodas and well-grown Miltonias, which included a good example of the varieties Cobbiana and alba; also M. Bleuana with 9 spikes. Cirrhopetalum pulchrum, Nanodes Medusae, and some Pleurothallis, etc., were noted. (Gold Medal.)

Messrs. Sander and Sons, St. Albans and Bruges, staged a very fine group containing great variety, both in species and hybrids. High up in the middle was an arrangement of the fine white Dendrobium Sanderae, the flowers bearing thin violet lines on the lip. Arranged over them was an elevated stand of Miltonia vexillaria of the large-flowered deep-rose tint, a pretty arrangement of smaller species occupying the front. Each end was carried up with a large number of fine specimens of the true original type of Cattleya Warscewiczii Sanderiana, giving masses of bright rose-coloured flowers with ruby-crimson labellums and pale yellow discs. Laelio-Cattleya Canhamiana and other Laelio-Cattleyas were well represented, two fine novelties being L.-C. Brugensis (L.-C. Martinetii × L.-C. luminosa), a very fine and richly coloured flower, and L.-C. Gottoiana Imperator (L. tenebrosa × C. Warneri), a large, dark flower of excellent quality. The home-raised Miltonias gave a varied display, M. Sanderae var. Enchantress and M. vexillaria illustris being very distinct. The group contained many fine Odontoglossums, the best being the new O. Invincible (Denisoniae × eximium), a grand flower in every respect, white with large, dark purple blotches. Another good novelty was Aërides Houlletianum Sanderae, with two long spikes of creamy-white flowers, with a yellow tint on the sepals and petals, and practically an albino of the species. (Gold Medal.)

Messrs. E. H. Davidson and Co., Orchid Dene, Twyford, staged a very pretty group, the higher centre of which was of excellent plants of Cattleya Warscewiczii, on each side being Cattleya Mendelii of a very distinct type, some nearly white and one having pink sepals and petals and wholly pure white lip. At the ends were two stands of mingled white Phalaenopsis Rimestadiana and red Renanthera Imschootiana, and the body of the group contained good Laelio-Cattleyas and Cattleyas, a very dark hybrid between C. Vulcan and C. aurea being conspicuous. Among Odontoglossums were the beautiful O. Aireworth Orchid Dene variety, a model shape and of fine colour, and O. eximium Orchid Dene variety. Other good plants were Odontioda Thwaitesii Purple Emperor, and Sophro-Cattleya Saxa Orchid Dene variety, salmon-pink with yellow disc. (Silver Cup.)

Messrs. Stuart Low and Co., Bush Hill Park and Jarvisbrook, Sussex, staged an effective group, at the back of which were various Oncidiums, Dendrobium Dalhousieanum, Vanda teres, and other tall-growing species. Prominent objects in the middle part were a fine specimen of Cyrtopodium punctatum and Oncidium serratum. Cattleyas were a feature, two very large and dark C. Warscewiczii, and a good lot of C. Mossiae, including a fine white form, being specially noteworthy. A small batch of the elegant Oncidium pulchellum, with scarlet Odontiodas and blotched Odontoglossums, were well arranged, and two raised stands of Phalaenopsis and Renanthera Imschootiana gave a good effect of depth to the group. Laelio-Cattleya Aphrodite Our Queen and The Don were two superb forms, and another good plant was L.-C. Martinetii Black Prince, a richly-coloured variety. (Large Silver Cup.)

Messrs. Mansell and Hatcher, Rawdon, Yorks, arranged an elegant group, the highest point of the centre being a fine specimen of Aërides odoratum with 8 spikes, arranged with good Odontoglossums and fronted by excellent forms of Laelio-Cattleya Canhamiana, L.-C. Martinetii and a few fine L.-C. Aphrodite, the new variety, The President, being far the best and fine in shape and colour. Cattleya Mossiae, C. Mendelii and C. Warscewiczii were well represented; as were also various Odontiodas, Miltonias, and good hybrid Odontoglossums. Odontonia Cleverleyana (M. vexillaria Leopoldii × O. Rolfeae) was a good novelty, and Cattleya Enchantress (intermedia alba × chocoensis alba) adds another white form to the useful hybrid Cattleyas. Dendrobium acuminatum, the white Trichopilia Backhouseana, the singular bright-red Cryptochilus sanguineum, Promenaea xanthina, Phaius Cooksonii and several species of Anoectochilus were also noted. Phalaenopsis Rimestadiana was effectively displayed, and the whole group specially well arranged. (Large Silver Cup.)

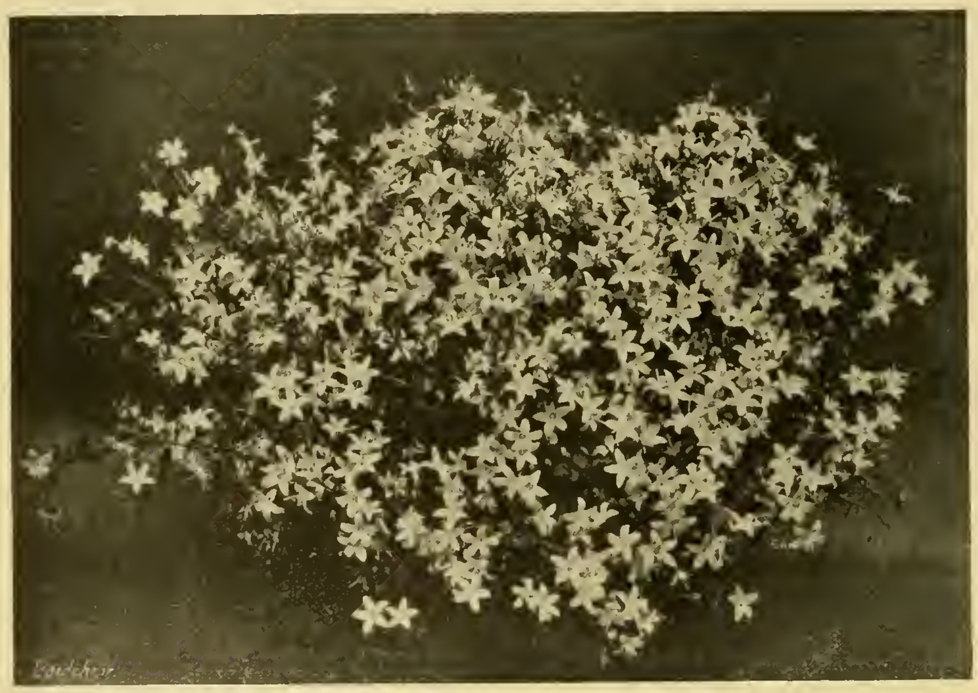


Fig. 11.—campanula garganica w. h. paine.
(See Awards by R.H.S. Floral Committee.)

Messrs. Flory and Black, Orchid Nursery, Slough, had a group, conspicuous for the large quantity and admirable quality of their Veitchian strain of Laelio-Cattleya Canhamiana, all the forms being good, and some remarkably distinct, having much broader sepals and petals than usual, from white to lilac, with deep, ruby-crimson lips. Other large-flowered Laelio-Cattleyas included L.-C. Aphrodite, L.-C. Violetta, L.-C. Rubens, and one of the new type of L.-C. Medina, a form which secured a First-Class Certificate at Chelsea this year. A number of fine plants of Disa Luna were furnished with tall spikes of rose-purple flowers, arranged in two clumps. Some good Laelio-Cattleya callistoglossa, L.-C. Gladiator, the new L.-C. Constance (Mossiae × bletchleyensis), L.-C. Sunset (L.-C. Pallas × C. Schröderae), a charming flower with a great resemblance to the famous C. Schröderae The Baron, peach-blossom shade of pink with orange-coloured centre to lip; some bright Odontiodas, and a rare selection of handsome-leafed Anoectochilus. (Large Silver Cup.)

Messrs. Charlesworth and Co., Haywards Heath, staged a selection of fine specimens, among which were noted the magnificent Odontoglossum Aiglon var. Majesticum, heavily blotched with dark violet. Among Laelio-Cattleyas, L.-C. Cowanii Yellow Prince had pretty yellow flowers with ruby-red lip; L.-C. Gottoiana grandis was very large and dark in colour; L.-C. Canhamiana alba had pure white sepals and petals; Miltonia vexillaria Queen Alexandra was a fine white; and other novelties were shown. (Silver Cup.)

Mr. C. F. Waters, Deanlands Nursery, Balcombe, staged a group of very good Cattleyas, Odontoglossums, Laelio-Cattleyas, etc. (Silver Flora Medal.)

Mr. Harry Dixon, Spencer Park, Wandsworth, had an effective and well-arranged group in which Cattleya Warscewiczii and other Cattleyas were well displayed, in the front being a good patch of Cochlieda Noezliana. Good Laelio-Cattleyas and hybrid Odontoglossums were also shown. (Silver Banksian Medal.)

Messrs. Armstrong and Brown, Tunbridge Wells, arranged a group of pretty hybrid Odontoglossums, scarlet Masdevallias, Cattleyas, and Laelio-Cattleyas, all well grown and finely flowered.

J. Gurney Fowler, Esq., sent a very fine form of Laelio-Cattleya Canhamiana alba.

W. Waters Butler, Esq., Southfield, Edgbaston (gr. Mr. Jones), sent Cattleyas Warscewiczii Southfield variety and the C. Clymene Southfield variety, both good flowers.

R. Brooman White, Esq., showed Odontoglossum crispum Chancellor of the Exchequer, a small form of the old type.

H. Dundee Hooper, Esq., Ardvar, Torquay, showed a plant of the original form of Odontoglossum coronarium, with a very strong spike of many brown and yellow flowers.

Floral Committee.

AWARDS.

First-Class Certificate.

Hypericum laeve rubrum.—A shrubby Hypericum with corymbs of orange-red flowers, from Asia Minor. The leaves are grey-green, linear, about an inch in length, and borne sparsely on the brown, twiggy stems. The plant flowers freely, and the inflorescence is a dense mass of bloom, but the individual flowers are only about half an inch in diameter, and have but small, ovate petals. Its great beauty lies in its colour, which is set off by the clusters of yellow stamens. The plant has withstood the last two winters at Sealand, but until further tried must be placed with half-hardy shrubs requiring the shelter of a south wall. The plant had reached 1½ foot in height. Shown by Messrs. Bees, Liverpool. A few days earlier than the show we received specimens of this species from **Mr. Hay**, Superintendent of Greenwich Public Park, where it flowered on June 20.

Awards of Merit.

Rose "Waltham Scarlet."—This is a brilliant single H.T. variety, with flowers of an intense rose-red, set off finely by the clusters of yellow anthers. It is not beautiful in the bud stage on account of the shortness of the petals, but its freedom and rich colour should make it a valuable addition to single bedding Roses. The flowers are about 3 inches in diameter. Shown by Messrs. W. Paul and Son, Waltham Cross.

Iris Kaempferi "Mikado."—This large-flowered Japanese Iris is one of the best of the pink shades. The ground colour of the petals is almost white, but it is delicately and richly veined and shaded with soft rose, which varies in depth of colour according to the age of the flower. The standards are purple-rose, and the style arms the same colour as the ground of the falls. It is thus one of the single or three-petalled varieties. Shown by Messrs. R. Wallace and Co.

Campanula garganica "W. H. Paine" (see fig. 11).—A delightful form of this little Alpine Campanula, in which the star-shaped flowers have heliotrope rays but a clear white centre. It has the glabrous, cordate toothed leaves of the type. A wonderful pan was shown. The growths 18 inches across and climbing 9 inches above the soil were almost covered with the blue flowers. Shown by Messrs. Watson and Son.

Gladiolus "Mrs. Atkinson" (see fig. 8).—This is an early-flowering variety derived from Ne Plus Ultra. It has the good habit and branched spike of G. ramosus, but the colour is a soft salmon-pink, with crimson blotches on the lower petals, so that it may be regarded as an improved form of Ackermannii, or Sarnian Gem. Shown by Mr. C. E. Blampied.

Sweet Pea "The President."—The flowers are rich orange-scarlet, shaded in the wings with carmine-rose. The carriage of the flowers is bold and fine, and they are borne mostly in threes, but it is the brilliant colouring of this seedling that gives it its chief merit. Shown by Messrs. A. Dickson and Sons.

Gladiolus "Radiance."—An early-flowering variety with very large orange-scarlet flowers, borne in spikes each carrying about 12 buds. The flowers expanded are 4 inches in diameter, and on the lower segments show a scarlet blotch, centred with a whitish, purple-edged tongue. The upper petals are very broad, and the habit seemed vigorous and free. It has something of the habit of insignis, but is probably derived from Ne Plus Ultra. Shown by Messrs. E. H. Wheadon and Sons.

Amaranthus "Dr. Martin."—This is a very showy variety for bedding or pots. The young leaves and growths are bright carmine, contrasting strongly with the outer halves of the older leaves, which are dark purplish brown. Young plants were shown in 3-inch pots, and massed together. They were very bright and effective. Shown by Mr. W. B. Upjohn, Worsley Gardens, Manchester.

Carnation "Gordon Douglas" (see fig. 7).—A bright crimson border variety, not very fragrant, but of magnificent form, with large, smooth, well-disposed and not overcrowded petals. The calyx is good and the habit vigorous, and it is probably the best of its shade of colour, which belongs to the lighter-coloured crimsons of which Mrs. George Marshall is perhaps the best known. Shown by Mr. J. Douglas.

Sweet Pea "Mrs. Hugh Wormald" is a very distinct bicolor with pale cream wings and soft creamy-pink standards. It is one of an interesting batch raised from Elsie Herbert × Sunproof Crimson. The flowers were borne mostly in threes, and the standards showed a habit of reflexing, but these are defects which will be remedied by garden culture; the flowers shown were field-grown. It is a very charming and striking novelty. Shown by Messrs. Hobbies, Ltd.

Carnation "Chelsea."—A white ground fancy variety richly splashed with rose-pink, with flowers of good form and size; this is a valuable addition to the perpetual-flowering fancies. Shown by Mr. A. F. Dutton, Iver.

Botanical Certificate.

Lysinotus "*Willmottae.*"—An interesting dwarf shrub with lilac-blue Pentstemon-like flowers and ovate-lanceolate leaves rather too large in proportion to the size of the plant to give it much merit as a rock garden shrub. It was exhibited by Miss Willmott, Great Warley.

Roses.

Messrs. W. Cutbush and Son, Highgate, staged a corner group of Roses, Carnations, and other flowers in the large tent. These flowers lend themselves well to effective grouping, and the exhibit made a pretty floral picture. The ground was furnished with dwarf polyantha Roses — Baby Tausendschön, Orleans, Mrs. W. Cutbush, Jessie, and other varieties, with standards here and there. One very effective group was of Erna Teschendorf, with a Phoenix Palm in the centre. At the back were banks of Carnations, also groups of Cannas, with Palms as a setting. Souvenir de la Malmaison and Perpetual-flowering Carnations were freely represented in the exhibit, the centrepiece being of choice "Malmaison" varieties. (Silver Banksian Medal.)

Messrs. W. Paul and Son, Waltham Cross, were the exhibitors of a magnificent floor group of Roses. A delightful feature consisted of numerous "shower" standards, the drooping sprays being a mass of blossoms; the varieties Lady Gay, Exce'sa, and Crimson Rambler were especially good. On the floor were baskets of exhibition blooms, whilst the centrepiece was a fine "bush" standard of the single Hiawatha grouped about with epergnes of Pharisaer. Conspicuous places were afforded the new variety Queen of Fragrance, which won the Cup offered by Messrs. Clay and Sons for the best new Rose "possessing the true old Rose scent," and the pretty single Waltham Scarlet, which secured an Award of Merit. The yellow Roses appeared to withstand the tropical conditions well, and Rayon d'Or especially. Other varieties that attracted attention were Prince de Bulgarie, Lieutenant Chaure and Liberty, two fine red varieties,; Senateur Mascurand, Dean Hole, Joseph Hill, Ophelia, Lady Ashtown, Mme. Jules Grolez, and Chateau de Clos Vougeot, which has rich colouring of a crimson-maroon shade. (Gold Medal.)

Messrs. Paul and Son, Cheshunt, exhibited a floor group of Roses near the entrance to the large tent. Numerous pillar plants were staged at the back. The exhibition blooms in baskets left little to be desired, and they represented a choice selection. Liberty, Miss A. de Rothschild, Mrs. W. J. Grant, Sunburst, Lieutenant Chaure, Hugh Dickson, and Duchess of Wellington had remained fresh and bright in the great heat; the yellow sorts were especially good, a fact which we noticed in other exhibits. The group was not crowded, a fault too common with exhibits of Roses. (Gold Medal.)

Messrs. Hugh Dickson, Belfast, gave a special interest to their group by the inclusion of some good seedlings. Gorgeous (cream and pink), Ethereal (a large single white), and Golden Gem (buff yellow), were among the best. The group, too, is worth mentioning as one of those in which no attempt had been made to overcrowd the space allotted, so that one could enjoy the beauty of individual blooms. (Silver Flora Medal.)

Mr. Chas. Turner, Slough, exhibited Roses in variety. He showed his novelties: Pearl, a seedling from Brunonis, of climbing habit, with large trusses of white single blooms; and May, a hybrid Wichuraiana, having rose-tinted, single flowers and glossy foliage. Of the older sorts there were good blooms of Frau Karl Druschki, Rayon d'Or, Duchess of Wellington, Lyon Rose, and Gottfried Keller. (Silver-gilt Banksian Medal.)

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, showed very finely an admirable collection, and we were struck by their freshness at a late hour on the first day, when so many of the Rose exhibits were withering. The variety Mrs. Chas. Russell was magnificent and very much admired. Chateau de Clos Vougeot, Rayon d'Or, Geo. Dickson, Willowmere, Leslie Holland and Mrs. A. Carnegie were also in good form. (Silver Flora Medal.)

Messrs. A. Dickson and Sons, Newtownards, staged Red Letter Day, Ed. Bohane, Lady Plymouth and H. V. Machin in a collection of Irish-raised varieties. Mrs. Foley Hobbs was fine and the group was rich in shades of yellow. (Silver Flora Medal.)

Messrs. Hobbies, Ltd., Dereham, made generous use of the Wichuraianas budded as standards, but being perched on tabling they were less effective than usual. Pharisaer, Rayon d'Or, Pink Pearl, Melody and other good sorts were well shown, and we also noted Effective, the new fragrant pillar Rose. (Silver Banksian Medal.)

Messrs. G. A. Bunyard and Co., Maidstone, showed a few exhibition varieties in boxes, but the feature of the group was its fine mass of Rayon d'Or, surrounded with Sunburst and other decorative Roses. (Silver Banksian Medal).

Mr. E. J. Hicks, Hurst, Twyford, Berks, staged a small group with considerable variety, but one's attention was rightly concentrated on the newer Roses, Mrs. Chas. Reed (cream and pink), Mrs. Geo. Norwood (bright clear pink, fragrant), and Princess Mary (crimson single). (Silver Flora Medal.)

Messrs. Ben Cant and Sons, The Old Rose Gardens, Colchester, exhibited a brilliant collection, quality and novelty being finely balanced. The single pink pillar Rose Cupid was particularly lovely, and there were wonderful batches of the glowing, rose-scarlet Augustus Hartmann and the flesh-coloured Hon. Mrs. R. C. Grosvenor. Melody, Rayon d'Or and Marquise de Sinety were also noted as excellent. (Silver-gilt Flora Medal.)

Messrs. W. and J. Brown, High Street, Stamford, included good masses of Mrs. Herbert Stevens and the Duchess of Wellington, but at the time of our visit in the afternoon of the first day the heat had destroyed the quality of what had been an interesting collection. Messrs. Brown also showed a group of hardy flowers. (Silver Flora Medal.)

Mr. Geo. Prince, Longworth, showed blooms prettily arranged in baskets with a background of ramblers as pillars. The soft pink Josephine Nicholson, Irish Fireflame, Lady Pirrie and Rayon d'Or we noted as above the average. (Silver Flora Medals.)

Messrs. Morse Bros., Woodbridge, arranged a small bank of Roses, in which Old Gold and Irish Fireflame showed prettily. (Bronze Flora Medal.)

Mr. Walter Easlea, Eastwood, Leigh-on-Sea, had a number of good Roses. Lieut. Chaure, Lady Bowater and Louisa Breslau were worth noting for their fine colour; Ed. Mawley, Sunburst and Fireflame also found place in the collection.

The Rev. L. Chalmers-Hunt, Willian Rectory, Letchworth, showed a small collection of Roses, interesting because the only collection staged by an amateur, and a group of Sweet Peas. (Silver Flora Medal.)

Messrs. Jackman, Woking, used Rayon d'Or, Lady Pirrie, Lyon and other little-known Roses in bold masses above boxes of exhibition blooms. (Silver Flora Medal.)

Mr. R. C. Notcutt, Woodbridge, had a pretty arrangement of standard Wichuraianas with an edging of Erna Teschendorf and Ellen Poulsen, dwarf Polyanthas. Miss Alice de Rothschild was shown especially finely. Mme. Herriot, Lt. Chaure and Harry Kirk were also noted as good. (Silver Flora Medal.)

Messrs. H. Lane and Son, Berkhamstead, used a few dwarf Polyanthas and other kinds around a centrepiece of Mme. Ravary.

Messrs. Frank Cant and Co., Colchester, arranged Wichuraianas loosely among a low ground of H.T.s and exhibition Roses. Lyon, Duchess of Wellington, Juliet and Lt. Chaure were fine, while among new seedlings we noted the fragrant Beulah. (Silver-gilt Flora Medal.)

Carnations.

Mr. Chas. Turner, Slough, exhibited Souvenir de la Malmaison Carnations in variety. The group was arranged with good effect, and the blooms were of excellent quality. There were bold clumps of such well-known varieties as Princess of Wales, Mrs. Trelawny, salmon-scarlet; Irene, pink; Thora, white with cream centre; Calypso, white faintly suffused with pink; and Maggie Hodgson, crimson. The group was bordered with the pretty dwarf cluster Rose Jessie. (Silver Flora Medal.)

W. M. Gott, Esq., Trenython, Par Station, Cornwall (gr. Mr. G. Hillman), showed Souvenir de la Malmaison Carnations in variety. There were large batches of the varieties Mrs. Trelawny, Duchess of Westminster, Irene, Sir Chas. Freemantle, and others. (Silver Banksian Medal.)

Messrs. Young and Co., Hatherley, were awarded a Silver Cup for an exhibit of Carnations of the perpetual-flowering type. They showed the new variey Lady Nunburnholme, like May Day, but much deeper pink; a big group of Cecilia, one of the best yellow sorts; Mrs. Raphael, a perpetual variety, with cherry-red flowers, and others.

Messrs. W. Wells and Co., Merstham, Surrey, exhibited several novelties. Snowstorm was especially good, by far the finest white in the exhibit; White Wonder, Peerless, a new variety of cerise colour; Champion, scarlet-and-yellow Prince. (Bronze Flora Medal.)

Mr. H. Lakeman, Thornton Heath, staged border varieties. The pale yellow ground fancy, Lieut. Shackleton, was specially fine, and there was quality evident in Lady Hermione, Salome, and other favourites. A few perpetual varieties were used at the back of the group. (Silver Banksian Medal.)

Mr. A. F. Dutton, Iver, Bucks, arranged one of the most satisfying groups from the artistic point of view. He was satisfied with a few good varieties, and then staged them effectively in white baskets. Mrs. A. F. Dutton made a fine centrepiece. Chelsea was given an Award. Marmion, Harlowarden, Niagara and Beacon were other good varieties. (Silver-gilt Flora Medal.)

Mr. H. Burnett, Guernsey, showed very beautifully grown flowers of Mrs. C. F. Raphael, Sunstar, Enchantress, Supreme, R. F. Felton, Carola, and other standard sorts. His stand is always worth attention for its fine colour and quality. (Silver Flora Medal.)

Mr. C. Englemann, Saffron Walden, built up a group finely from the ground level with large vases of Marmion, Variegated Carola, Scarlet Carola, Mrs. C. F. Raphael, White-Wonder, etc. round a centrepiece of the cerise-pink Pioneer. The blooms were finely grown, and the arrangement an effective one. (Gold Medal.)

Mr. E. J. Wootten, Fairoak, Eastleigh, staged a group of perpetual-flowering varieties. (Bronze Flora Medal.)

Messrs. Stuart Low and Co., Bush Hill Park, with a free use of Nephrolepis fronds and Asparagus made an artistic display of a collection of Carnations, principally Malmaisons. Princess of Wales and the dark magenta-crimson Cleopatra were outstandingly good. (Silver Banksian Medal.)

Begonias.

Messrs. Blackmore and Langdon, Twerton-on-Avon, Bath, showed superb Begonias of the tuberous-rooted section. The wide range of colouring of soft tints characteristic of these flowers, the large size of the blooms and excellent quality of the plants stamped this exhibit as one of the highest merit. Some delightful hanging baskets, furnished with such pretty varieties as Rose, Cactus, Lena, red, and Corallina, salmon, especially appealed to us as having great value for greenhouse and conservatory decoration. Of the larger sorts, Princess Victoria Louise, soft pink; F. W. Walker, scarlet; Florence Nightingale, white; Mrs. J. B. Blackmore, an exceedingly pretty variety with waved, deep salmon-coloured petals; Countess of Waldegrave, a new variety of the "Rose" type of shell-pink colour; Grand Monarch, crimson, also new; Mrs. James Douglas, yellow; Mrs. Peter Blair, white, with a faint tinge of rose colour; and Mrs. G. Lovelock, with incurved and waved ivory-white petals. (Gold Medal.)

Mr. A. Ll. Gwillim, Sidcup, Kent, showed good Begonias of the tuberous-rooted section. In the centre was a bank of the fine yellow variety, Margaret Gwillim, and we also noted as being especially good Mrs. H. Harris, apricot-salmon; Mrs. Boddington, crimped petals of soft pink shade, forming a rosette-like flower; and Mrs. J. G. Gwillim, rosy-salmon. (Standard Cup.)

Messrs. T. S. Ware, Ltd., Feltham, staged one of their admirable exhibits of tuberous-rooted varieties. Such sorts as Mrs. Bilkey, Daffodil and Gladys were very pretty in hanging baskets, but the bulk of the group consisted of the salmon-orange coloured variety, King George V., the soft pink Lady Cromer, and other choice exhibition flowers. (Silver Cup.)

Mr. W. S. Edwardson, Elsdon, Sidcup, showed an interesting batch of home-raised Begonias. Apricot shades predominated, and some of the varieties are worth propagating for their fine form. (Silver-gilt Flora Medal.)

Messrs. Stuart Low and Co., Bush Hill Park, staged an interesting collection of tuberous Begonias. Although not notable for their size, some very fine colours were included—e.g., Mrs. Stoneham and Margaret Gwillim in the yellows; Sir Garnett, the deepest crimson-scarlet, and Snowdrop, May Pope and F. Nightingale, good whites. New Holland plants, Hydrangeas, Statice profusa and other greenhouse plants, were also shown by this firm. (Silver-gilt Banksian Medal.)

Sweet Peas.

Messrs. Sutton and Sons, Reading, made a large display, in which quality, quantity and tasteful arrangement were admirably balanced. Black velvet shields were used to display the choicer varieties, and intermediate columns of other sorts were linked together with sprays of Smilax. The orange-coloured variety, T. Stevenson, formed a fine centrepiece, though hardly deserving in other respects to be singled out from the large number of varieties equally well grown. (Gold Medal.)

Sir Randolf Baker, Bart., Ranston, Blandford (gr. Mr. A. E. Usher), showed some of the best flowers in the show in a simple but telling arrangement. W. P. Wright, Edsom Beauty, and R. F. Felton were displayed in tall columns running to the roof of the tent, Barbara and King Manoel formed fine terminal masses, while the centre was formed of Clara Curtis. (Gold Medal.)

Messrs. Dobbie and Co., Marks Tey, had an outstandingly fine group in which culture vied with newer varieties to catch the eye first. Dobbie's Orange, cream and new mauve, were very fine. Illuminator, Frilled Pink, Marks Tey, and Virgin White also stood out well. In the front of the group the flowers were densely packed in bowls, and the looser arrangement behind led to a free, bold grouping in piled-up masses at the back. (Gold Medal.)

Messrs. Hobbies, Ltd., Dereham, included some very pretty seedlings. Mrs. Hugh Wormald (see new plants) caught everybody's eye as a distinct break, but Mrs. Fred Kelley, a blue picotee-Spencer, and Mrs. Fred Arey, a pink-flushed cream, are other 1914 novelties which were much admired. (Standard Cup.)

Messrs. Alex. Dickson and Sons, Ltd., Newtownards, staged some very finely-grown flowers. The President was given an award (see new plants), and we admired such varieties as Seamew (pale lavender), Orchid (pale mauve) and Dragonfly (lavender and cream), which were not to be seen elsewhere in the show. The arrangement was also a novel one, attracting attention. (Silver Cup.)

Messrs. J. Carter and Co., Raynes Park, showed a good collection of standard sorts. Mrs. Heslington, R. F. Felton, T. Stevenson, and Florence Nightingale were a few that we noted for their good colour. (Standard Cup.)

Messrs. Barr and Sons, Covent Garden, W.C., and Mr. G. Stark, Great Ryburgh, also showed collections of Sweet Peas.

Messrs. Robt. Sydenham, Ltd., Birmingham, in a collection emphasised the value of the orange Robert Sydenham with Norvic (white), and Lady Evelyn Eyre (soft pink). (Bronze Banksian Medal.)

Mr. J. D. Webster, Chichester, staged Sweet Peas with Madonna Lilies.

Lord North, Wroxton Abbey, Banbury (gr. Mr. E. R. Jones), sent some finely-grown flowers, including Barbara, Doris Usher, Lavender George Herbert, Queen of Norway, and Edsom Beauty—some of the finest stems in the show. (Standard Cup.)

Messrs. E. W. King and Co., Coggeshall, arranged a huge temple-like display of flowers, with pillars and arches of choice varieties built up from the ground. Anglian Princess Mary (mauve), Lilian, and Anglian Cream were noted as specially fine. (Silver-gilt Cup.)

Messrs. S. Bide and Sons, Farnham, included a number of interesting novelties. Phyllis Bide seemed very close to Dobbie's Orange. Violet Crabbe, King White, Barbara and R. F. Felton were also shown well. (Silver-gilt Banksian Medal.)

A Silver Medal was awarded to Mr. J. Box, and a Bronze Flora Medal to Messrs. Ed. Webb and Sons for exhibits of Sweet Peas.

Ferns.

Messrs. J. Hill and Son, Edmonton, exhibited a large group of tender Ferns in the principal tent. Many of the plants were large specimens, and all were splendidly cultivated. Some had prettily tinted fronds, including Adiantum tinctum, A. macrophyllum and Pteris aspericaulis. A noble specimen of Platycerium grande was in the finest condition, the "antlers," as the fertile fronds are known, being especially good. There were large plants of Davallia pentaphylla, Asplenium marginatum, with broad, divided leaves, each segment being as large as a frond of Scolopendrium vulgare; Davallia fijiensis robusta, Gleichenia semivestita, Polypodium Knightiae, with long, arching fronds, each like a beautiful plume; Polypodium quercifolium and Nephrolepis amabilis, a crested Fern, with dark-green fronds. A tall tree Fern—Cibotium Schiederi—had a spread of fronds 14 feet wide, this being the giant of the collection. (Gold Medal.)

Messrs. H. B. May and Sons, The Nurseries, Edmonton, also put up a magnificent exhibit of exotic Ferns in the large tent. The finest plant in this meritorious exhibit was a specimen of Polypodium Vidgenii; the arching fronds are finely cut, and of a beautiful shade of green, each arising clear of its fellow to form a large rosette. Its rival was the beautiful Polypodium Knightiae. Trained to tripods some 12 feet high were plants of Lygodium japonicum, and these served as foils. Others noted were Platycerium grande, Adiantum Veitchii, with rose-tinted fronds; Nephrolepis elegantissimus, Davallia splendens, Pellia rotundifolia, the round pinnae a dark, metallic shade; Davallia tenuifolia Veitchii, with golden-green leaves like delicate tracery; Blechnum corcovadense, Polypodium Mandaianum, a "giant" with glaucous fronds, and Adiantum peruvianum. (Gold Medal.)

Mr. W. A. Manda, St. Albans, sent a group of Ferns, in which prominence was given to Polypodium Mandaianum and the newer Nephrolepis. (Bronze Flora Medal.)

Trees and Shrubs.

Messrs. Waterer, Sons, and Crisp, Ltd., Liverpool Street Arcade, London, showed some of their choicer Rhododendrons, which were notably good for the time of year. We noticed Gomer Waterer (white, flesh edge), Beauty of Bagshot (large flower, flesh white, richly blotched with olive on rose), Countess of Tankerville (pink), and Lady Hillingdon (white). Some noble specimens of Kalmia latifolia occupied the centre, and the whole group was prettily relieved by the delicately cut foliage of varieties of Acer palmatum. (Included in the award of Silver-gilt Cup.)

Messrs. Geo. Jackman and Son, Woking, showed varieties of Clematis of the high standard associated with this firm. (Silver Flora Medal.)

The Donard Nurseries, Newcastle, Co. Down, showed the Edinburgh Escallonia, with Olearia ilicifolia and other little known shrubs, but the feature of the group was the Leptospermums, L. Nichollsii and L. Boscawenii both being shown well as small flowering plants. (Silver Flora Medal.)

Mr. G. Reuthe, Keston, Kent, showed many interesting and little known shrubs. We noted Prostranthus lasianthus, Styrax japonica, Philesia buxifolia, Crinodendron Hookeri and Berberidopsis corallina.

Mr. Chas. Turner, Slough, staged a mixed collection of cut sprays of flowering shrubs, of which Ceanothus, Philadelphus, Spiraea, Weigela and Rhus formed the principal genera. Fagus sylvatica asplenifolia and variegated Elms and Maples represented an interesting series of trees notable for their foliage. (Bronze Flora Medal.)

Messrs. Paul and Son, Cheshunt, showed an interesting collection of cut flowering sprays, though overcrowding prevented their due appreciation. Elaeagnus longipes in fruit was good. Amorpha fruticosa, Spiraea assurgens, Ligustrum multiflorum and Paul's purple-leaved Almond were also noteworthy.

Messrs. James Veitch and Sons, Ltd., Chelsea, showed Elaeocarpus reticulatus, as small trees, the branches studded with the pretty white, fringed flowers. It is a native of Australia, and will succeed out of doors in such favoured parts as Cornwall and Devon.

Hardy Flowers.

Japanese Irises (I. Kaempferi) have never been so finely shown before in this country as in the group of Messrs. R. Wallace and Co., Colchester. A stream garden had been designed covering nearly one thousand square feet. Trollius chinensis, Iris Delavayi, Rodgersia tabularis, the newer Astilbes and Water Lilies were included in the planting scheme, which had been prettily planned to cover both banks of the water, access to the further bank being afforded by large, flat stones crossing the water in Japanese fashion. But the whole scheme was dominated by the magnificent forms of I. Kaempferi, some of which reached 5 feet in height. We counted over 100 flowers of Morning Mist, each of which would have covered a dinner plate, and throughout the 25 distinct sorts this high standard of quality was sustained. The variety Mikado received an Award of Merit. Other choice named forms included The Geisha (a finer flower than the Mikado), Mandarin, Purple Emperor, White Wings, Rosy Dawn, and Recumbent Dragon. The massing and grouping of the colours had been carried out with great taste, and this exhibit was awarded the Coronation Challenge Cup as the best exhibit in the Show. (Gold Medal.)

Messrs. Wallace also showed a large collection of Delphiniums, Eremuri, Lilies, and seedling Hemerocallis in one of the smaller tents and some alpine plants. (Silver Banksian Medal.)

Messrs. Baker, Codsall, Wolverhampton, showed a large collection of English Irises and Delphiniums. A representative selection of the Irises would include Mont Blanc (pure white), Jeanne d'Arc (splashed lavender), Bleu Celeste (pale lavender), Queen Regent (pale blue falls, purple standards) and L'Unique (purple).

Messrs. G. Jackman and Son, Woking, staged effectively some bold clumps of hardy herbaceous plants. The Delphiniums were good; Galega Niobe is a fine white form; Wahlenbergia vincaeflora, Helenium cupreum, Scabious and Verbascum were well shown. (Silver Flora Medal.)

Messrs. J. Cheal and Sons, Crawley, supported a bank of flowering and foliage shrubs (Veronica, Acer, Rhododendron, etc.) with a low wall in shallow, bedded stone planted suitably with wall plants and a bolder piece of rockwork in the foreground, which gave suitable sites for Erythraeas, Genistas, Campanulas, Thymes and Sedums. Vases of Hydrangeas gave a terrace-like effect to the wall, but the design was hardly simple enough, we thought, for so confined a space.

Messrs. Waterer, Sons, and Crisp, Ltd., Liverpool Street Arcade, E.C., led from a foreground of rockwork planted with Campanulas, Hypericum Coris, Euphorbia dulcis variegata, Wahlenbergia croatica and other good plants to a boldly planted background of Delphiniums and other tall herbaceous plants, in which distinctive place was given to some good seedling Eremuri in pale shades of yellow and buff. All the plants were interesting, but there was something discordant in the overtopping of the Alpines by the stronger border plants, which marred the character of the group. (Silver-gilt Cup.)

Messrs. T. S. Ware, Ltd., Feltham, also made the same convenient but inartistic use of rockwork as a foreground to a display of herbaceous plants in the rear. Lavatera thuringiaca (Olbia), Sanguisorba sitchense, Circium arachnoideum, Astilbe simplicifolia and Campanula alaskana were a few of the good distinctive plants.

Miss HOPKINS, Mere Gardens, Shepperton, showed a low bed of herbaceous flowers with a rock garden most appropriately placed at one end, with a number of choice little plants to furnish it.

One of the prettiest pieces of rockwork in the Show was that of Messrs. J. PIPER, Bayswater, which filled one of the corners of the large tent. Campanulas and Pinks in rocky ledges, Pratias and Thymes in the crevices of steps, Acantholimon and Sedum in rocky faces and masses of Wahlenbergia and Pentstemon in broad pockets all appeared in proportion and well placed. The bold rockwork backed by Pines on the right fell on the left to a little pool planted with Japanese Irises, Typhas, and Bamboos. (Standard Cup.)

Messrs. BARR AND SON, Covent Garden, arranged a distinct and pleasing group of herbaceous plants. A background of Delphiniums, Eremuri, and other border flowers led on one side to a foreground of Salvias, Heucheras, Linums, and Brodiaeas, with a fine patch of Watsonia humilis, while on the opposite end above a pool of Water Lilies, Japanese Irises and other tall waterside Irises carried out a bolder idea in planting. (Silver Knightian Medal.)

Mr. AMOS PERRY, Enfield, showed how effectively Delphiniums can be massed in separate colours. He had many fine forms, but we specially noted King of Delphiniums, lilacina, Corry, Netty, and F. F. Fox. In the foreground a wider variety of subject was allowed, and place found for a pretty race of single garden Pinks (Mrs. Logan and Mrs. Perry were the best), for Hemerocallis Baronii (a very vigorous pale yellow), Lilium parvum, L. Grayi, and other American species; Ostrowskia magnifica and Water Lilies. Hardy Ferns formed a pleasing edge and groundwork. In another tent Mr. Perry had a special collection of hardy Ferns and some forms of Osmunda regalis cristata, Athyrium Filix-foemina and Polystichum angulare divisilobum were very beautifully shown. (Silver Cup and Silver-gilt Flora Medal).

Messrs. J. CARTER AND CO., Raynes Park, designed a water garden in restful colours. Birches and dwarf Bamboos added their slender greenery to the turf groundwork, and masses of simple colour were provided by large clumps of about a dozen distinct kinds of Iris Kaempferi, of which Yvette Guilbert (deep blue), Albertina (double white), and Admiration (splashed purple), were very pleasing. The middle of the group was broken to allow the passage of the stream by a stone bridge, which led to what might be termed an overflow garden of Irises in the open. (Silver Cup).

Mr. MAURICE PRICHARD, Christchurch, staged an admirable collection of hardy border and rock plants in the centre of the large tent. Space will not allow us to enumerate the long list of good plants we noted, but we may pick out as of special interest a beautiful tall white Poterium, with hanging spikes, Hypericum cuneatum, Lavatera Olbia, Sedum pilosum, and Linum flavum, with some well-grown Delphiniums and Japanese Irises. (Silver-gilt Banksian Medal.)

Mr. JAMES BOX, Lindfield, Haywards Heath, had a distinctive arrangement of Delphiniums and Irises above a pool of Water Lilies. The lesser-known plants included Digitalis lanata, D. grandiflora, Orchis foliosa, and Campanula glomerata superba, but the collection was a varied one, and showed good cultivation. (Silver Cup.)

Messrs. HARKNESS, Bedale, Yorks, made especial use in their display of herbaceous plants of their new hybrid Verbascums. Lady Allison is a magnificent yellow variety. International and Lady Havelock Allan are lovely buff yellows, with enormous flowers and spikes. The rich shades of Oriental Poppies were well used to make more effective the noble spikes of the Mulleins. (Silver Banksian Medal.)

Messrs. PHILLIPS AND TAYLOR, Lily Hill Nurseries, Bracknell, had one of those groups of quiet colours and restful lines, on which the eye especially delights to rest after feasting on the gaudy reds and pinks of Sweet Peas and Carnations. It was a collection of Reeds and Rushes and fine flowers of Water Lilies, to which a touch of stronger colour was given by Trollius yunnanensis and Verbascum vernale.

Messrs. KELWAY AND SON, Langport, made a speciality of Delphiniums. Monarch of All (dark purple), Star of Langport (pale blue, white eye), James W. Kelway (dark violet purple, white eye), and Dusky Monarch (deep heliotrope) would have compared favourably with any spikes in the show. (Silver Flora Medal.)

Messrs. G. AND A. CLARK, LTD., Dover, also made good use of bold clumps of Delphiniums, including a number of new seedlings, but their exhibit had a wider range, and covered the whole field of plants for the mixed border. Gilia coronopifolia and Eremurus Bungei were shown well. (Silver Cup.)

MARY COUNTESS OF ILCHESTER, Holland House, showed an interesting collection of nearly 200 pans of Saxifrage, Sedum, and Sempervivum, with some good fruiting plants of Nertera depressa. (Standard Cup.)

Messrs. G. BUNYARD AND CO., Maidstone, arranged a group which, though not very large in extent, compared favourably with anything in the show for its excellent quality. The Rev. E. Lascelles and The Alake, among the Delphiniums, were splendid, and other outstanding plants were Campanula tyrolensis (a dark blue pusilla), Calceolaria Kayii (hardy during the last two winters), Verbascum pannosum, and hybrids, and Erigeron Edina. (Silver Gilt Banksian Medal.)

Messrs. RICH AND CO., Bath, showed some good Gaillardias with Phloxes and Delphiniums.

Messrs. FRED SMITH AND CO., Woodbridge, showed some good Verbascums. Smith's hybrid was one of the best yellow varieties we have seen, though we should like it tried side by side with Harkness' hybrid, for better comparison. Malva (Lavatera) Olbia, Oenothera Fraseri, and several good Delphiniums gave fine patches of colour. (Silver Flora Medal.)

Messrs. B. LADHAMS, Ltd., Southampton, showed a good race of garden Pinks, with their new Erigeron B. Ladhams, a fine form of the double Campanula persicifolia grandiflora and other herbaceous plants. (Silver Banksian Medal.)

Messrs. GILBERT, Dyke, Bourne, Lincolnshire, staged a remarkable batch of Martagon Lilies. White and pink varieties were very beautiful, as also were deep-coloured forms of L. dalmaticum and L. Cattaniae; but the whole were so densely packed at a uniform level that it was impossible to admire them as plants of individual beauty and merit as they deserved.

Messrs. BEES, LTD., Sealand, Chester, showed some good Delphiniums and hardy herbaceous plants, but it was their new and rare plants that gave distinction and quality to their collection. We specially noted Primula pseudo-capitata (stouter and a better perennial than P. capitata, a new Chinese plant), Hypericum laeve rubrum (see Awards of Merit), Trollius patulus and patulus Bees' var., Primula angustidens (a much superior P. Poissonii), Dracocephalum Bullatum, Patrinia palmata, and Armeria Bees' Ruby. These plants enabled one to overlook the fact that the "rocks" were made of cork. (Silver Flora Medal.)

Messrs. BARRIE AND BROWN, King William Street, E.C., showed Viscarias and English Irises.

Messrs. THOMPSON AND CHARMAN, Bushey, Hertfordshire, showed some excellent plants. The new Verbascum Warley Rose overshadowed the rest, but Gilia coronopifolia, Polemonium flavum, Gentiana lutea, and Campanula lactiflora alba are seldom seen in finer condition. (Silver Flora Medal.)

Mr. FRANK LILLEY, Guernsey, showed an excellent batch of bulbous plants. Dierama (Sparaxis) pulcherrima and pendula, early Gladioli, Watsonias, Ixias, etc., all showed fine culture.

Messrs. R. H. BATH, LTD., Wisbech, showed Paeonies, English Irises, and other hardy herbaceous plants, but their specialities were fine clumps of the new Astilbe Philadelphia and some lovely clumps of such newer Delphiniums as Sir Geo. Newnes, Clara Stubbs, and Le Danube.

Messrs. PAUL AND SON, Cheshunt, showed Heucheras, Paeonies, and other border plants.

Mr. HOWARD CRANE, Highgate, showed his charming little race of Violettas. While other florists are working for large flowers he is aiming at small and very dainty varieties. The arrangement in shallow pans of wet sand was pleasing and in harmony with the natural disposition of the flowers a few inches only above ground level. (Silver Flora Medal.)

Mr. JAMES DOUGLAS, Edenside, Great Bookham, showed a beautiful selection of his Bookham border Carnations. "Gordon Douglas" (see fig. 7) won an Award of Merit (see p. 16). Greyhound, Fujiyama, Hercules, Brockham Gem, and Mrs. R. Berkeley covered a rich range of self colours. These were shown with the Bookham race of garden Pinks. (Silver Banksian Medal.)

Mr. SEAGRAVE, Sheffield, showed Violas finely in about 60 distinct sorts. They were shown in sprays, and included some finely-coloured novelties. (Silver Flora Medal.)

Messrs. PULHAM AND SON, Newman Street, London, in a small tufa rock garden, showed some very pretty seedling Pinks among dwarf shrubs and other plants suitable for the Alpine garden.

Mr. H. HEMSLEY, Crawley, showed his pretty strain of hybrid Snapdragons, with Dorycnium hirsutum, Heeria elegans, and other little-known plants. (Silver Banksian Medal.)

The BURTON HARDY PLANT NURSERY, Christchurch, included some pretty and little-known rock plants. Myosotis azorica, Dianthus Atkinsonii, Campanula excisa, Viola bosniaca, and the dark blue form of Campanula pusilla are worth noting.

J. S. ARKWRIGHT, Esq., Kinsham Gardens, Presteign (gr. Mr. Bevan), sent a fine batch of his hybrid Lychnis × Arkwrightii. The plants showed great vigour and a considerable range in the depth of colour in their scarlet flowers. (Silver Banksian Medal.)

Messrs. GUNN AND SONS, Olton, showed Phlox decussata in choice varieties. A good colour selection included Elizabeth Campbell (pink), F. A. Buchner (white), Ellen Willmott (lavender), Rijnstroom (rose), and Coquelicot (scarlet).

Mr. H. J. JONES, Ryecroft Nurseries, Lewisham, also showed Phloxes in exceptionally good form. To the above should be added Dr. Charcot, G. A. Strohlein, General van Heutsz, and some good self-coloured seedlings in pink and rose colours which are not yet named. A good strain of Canterbury Bells in white, blue, and pink was also included. (Silver Flora Medal.)

Messrs. BLACKMORE AND LANGDON, Twerton Hill Nurseries, Bath, showed an unrivalled batch of choice Delphiniums. Daniel Osiris (mauve-blue, white eye), Robert Cox (deep violet-blue), Lavanda (heliotrope), Henri Moissan (deep purple), Harry Smethan (rich blue semi-double), and the remarkable full double Lieut. Vasseur, with pale mauve-blue flowers, deserve a place in every collection. (Silver-gilt Banksian Medal.)

Mr. VERNON T. HILL, Langford, Bristol, in a small area included some very choice little plants. Campanula garganica W. H. Paine was given an Award of Merit (see fig. 11), and Asperula ciliata and Teucrium pyrenaicum deserve to be singled out for mention.

The GUILDFORD HARDY PLANT NURSERY showed a small group of shrubs and herbaceous plants. Spiraea Kneiffi, Scabiosa ochroleuca and Ferula gigantea were distinctive plants. (Silver Banksian Medal.)

Messrs. W. CUTBUSH AND SON, Highgate, arranged a refreshing, cool group of blues and greens, dominated by Delphiniums and Japanese Irises, but given a touch of relief by the yellows of Trollius and Oenothera, and the white of Gillenia.

Mr. R. TUCKER, George Street, Oxford, included many Alpine gems in a small compass. The Campanulas were especially rich, and C. speciosa and C. Mollis, we believe, were in no other group. Ruta patavina, Pratia linneaeoides and Sedum Sempervivum were other choice subjects. (Silver Banksian Medal.)

Mr. W. J. GODFREY, Exmouth, staged his well-known strain of Canterbury Bells in shades of pink, mauve and purple, with a miscellaneous collection of Scabious, Delphiniums and bedding plants. (Silver-gilt Banksian Medal.)

Mixed collections of herbaceous flowers were also shown by the following firms:—

Mr. G. W. MILLER, Clarkson Nurseries, Wisbech, who had Delphinium The Alake and Campanula humosa especially good. (Silver Banksian Medal.)

Mr. G. Gibson, Leeming Bar, Bedale, showed some good Poppies and Gaillardias. (Silver Banksian Medal.)

Mr. R. C. Notcutt, Woodbridge, who showed the white forms of Statice Suworowii, double Hesperis matronalis and Scabiosa caucasica.

Messrs. Whitelegg and Page, Chislehurst, who gave a feathery effect to their exhibit by the free use of Astilbes and Heucheras. (Silver Banksian Medal.)

Mr. A. Campbell, Pannal, Harrogate, a small rock garden, with Erythraea diffusa, Azalea rosaeflora and other good plants. (Bronze Flora Medal.)

Messrs. W. Wells and Son, Merstham, showed Delphiniums and Gaillardias.

The Dulwich Chrysanthemum and Horticultural Society and the Swanaoe Horticultural and Industrial Society, who showed hardy border flowers in vases.

Mr. G. Stark, Great Ryburgh, with a new strain of Kniphofias. (Silver Banksian Medal.)

Mr. T. H. Gaunt, Farsley, Leeds, Sedums, Campanulas and yellow Linums in pots.

Mr. Wm. Arkwright, Sutton Scarsdale, Chesterfield, sent an interesting series of copper, bronze, and maroon Violas, representing varying depths of red colouring on a yellow ground. Some of them should make very pretty garden plants.

Mr. H. Newman, Woodford Road, Watford, showed large masses of the new border Pink "Challenger." (Bronze Flora Medal.)

Mr. W. Iceton, Putney, showed a fine bank of Lily-of-the-Valley.

Exhibits Staged in the Open.

The Hon. Vicary Gibbs, Elstree (gr. Mr. E. Beckett), exhibited a collection of trees and shrubs raised from seed collected in China. Very few were in flower, but many subjects were of unusual interest, and we noted Liriodendron Lhinense, Styrax Wilsonii (in flower), Hydrangea Sargentiana, Viburnum theiferum, Fraxinus 1392, Liquidambar formosana var. monticola, and Aesculus Wilsonii as amongst the most distinct. (Silver-gilt Medal).

Mr. J. Wood, Boston Spa, Yorks, built the largest and most effective of the rock gardens. Making good use of the mountain Yorkshire limestone, with which he always seems at home, he designed a garden governed by quiet lines. In front was a low stretch of outcropping stone covered with dwarf Campanulas, Sedums, etc., which towards the back rose simply in a few broad ledges planted with Nepeta, Hypericum, Heuchera and Saxifrage. Summer had largely restricted the use of flowering Alpines, but to the north end of the group an attempt was made to balance this by introducing a small pool, out of harmony, indeed, with the general plan, but an opportunity for displaying Iris Kaempferi. Water Lilies and other water-loving plants. (Silver Cup.)

Mr. Clarence Elliott, Stevenage, showed an interesting group of dwarf Alpines in a suitable setting of the grey Cheddar stone and granite chips. The genus Campanula was especially well represented with a lovely mass of C. pusilla Miss Willmott, and with C. Raddeana, C. G. F. Wilson, C. pulla, and C. barbata. Erythraea, Scutellaria, Mentha and Thymes gave pleasing variety. (Silver Flora Medal.)

Messrs. R. Wallace and Co., Colchester, planted a steeply-sloping bank of Cheddar stone near to the entrance to the private gardens. Erodiums, dwarf, shrubby Hypericums, and Campanulas contributed most to the pretty effect, although numbers of lesser-known genera were included. (Silver Cup.)

The Ightham Alpine Nursery, Sevenoaks, built up a small rock-group on tabling. Vivid, a choice dark form of Dianthus neglectus, and the quaint little Slieve Donard forms of Viola tricolor, with Thymes, Saxifrages and Calaminthas formed the foundation of the planting plan.

Messrs. H. B. May and Sons, Dyson's Lane Nurseries, Edmonton, epitomised a number of simple bedding schemes near to the Secretary's tent. Thus Verbena King of Scarlets was used under Abutilon Savitzii in one bed, and in another one of the new hybrids of Fuchsia fulgens overhung the pink Pelargonium Lady Ilchester; Lantanas, Heliotropes and other bedding plants were used in the same manner. (Silver Banksian Medal.)

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, showed a fine set of pot Figs. (Silver Knightian Medal.)

Messrs. Kent and Brydon, Darlington, in a very limited area contrived to show a large number of choice little-known rock plants in a setting of grey mountain limestone. Scutellaria lupulina, Malvastrum lateriteum, Aletris farinosa and the dwarf Fagus Cunninghamii, with evergreen Azara-like foliage, were noted among Linaria alpina, Campanulas, Hypericums, and other better-known plants. (Silver Banksian Medal.)

Mr. L. R. Russell, Richmond Nurseries, Surrey, arranged a rich collection of golden and variegated tree Ivies around a centrepiece formed by the bold-cut foliage of Aralia mandshurica fol. var. In the foreground a little pool was furnished with cool-looking Bamboos, Funkias and Irises. Actinidia chinensis, Vitis Henryana and other climbers found place among a number of other good shrubs. (Standard Cup.)

Messrs. James Carter and Co., Raynes Park, in a group connecting with their main exhibit in the large tent, continued the richly-planted border of Iris Kaempferi under Bamboos. A centrepiece was made of the double blue Peach-leaved Campanula and the cup-and-saucer variety of the white form of it. (Silver Cup.)

Messrs. Piper, Bayswater, showed a valuable collection of trimmed Box and Yew in many quaint shapes, with Japanese pygmy trees and Maples in pots. (Silver Banksian Medal.)

Mr. G. Reuthe, Keston, showed an interesting collection of little-known shrubs and trees, rich in Himalayan Rhododendrons and plants generally regarded as hardy only in the south-west. On a small rock garden, on tabling, he included Rhodocistus Bartolinii, Campanula fenestellata, Saxifraga squarrosa, with such better-known and showier subjects as Orchis foliosa. (Silver Flora Medal.)

Messrs. Cheal and Son, Crawley, showed trained and clipped Box and Yew for the formal garden. Yews trained as sailing ships were admirable specimens of the topiary art. (Silver Flora Medal.)

Messrs. W. Cutbush and Son, Highgate, contributed a collection of the cut-bushes so frequently associated with their name. Animals and birds in Box predominated, but two tall columnar Yews formed magnificent specimens.

Messrs. Liberty, Regent Street, London, showed dwarf Japanese trees in pots, and the much-admired little model gardens of Japanese workmanship, with various examples of garden pottery and furniture.

Messrs. John Forbes, Ltd., Hawick, in their well-known position near to the entrance, staged fine Phloxes, Pentstemons, and Delphiniums. (Silver Banksian Medal.)

Messrs. W. Fromow and Son, Chiswick, arranged an excellent collection of Japanese Maples, varieties mainly of Acer palmatum and A. dissectum, but with a few other distinct-leaved species and variegated Aralias. They formed at the same time one of the largest and most distinct of the outdoor collections, and in the great heat experienced on the first day of the show gave a pleasant, cool relief in their delicately-cut and softly-coloured foliage, after the brilliance of the flowers under canvas. (Standard Cup.)

The Guildford Hardy Plant Nursery, Guildford, showed a small collection of Alpines and rock shrubs on tabling. Perhaps its most instructive feature was the rich collection of Sedums and Sempervivums, but colour and interest were given by Wahlenbergia dalmatica, Hypericum empetrifolium, Jasione humilis and a finely-flowered clump of Nierembergia rivularis. (Bronze Flora Medal.)

Messrs. Whitelegg and Page, Chislehurst, designed a pleasing rock garden exhibit. Its lines were governed by the admirable grey mountain limestone employed, but one's attention was drawn from the design to the quality of the plants, which were above the average in freshness and variety. Cortusa villosa, Alyssum pyrenaicum, Campanula pusilla alba, C. Raddeana, and Saxifraga cotyledon var. pyramidalis attracted attention. (Silver Flora Medal).

Messrs. Pulham, Newman Street, London, constructed a small paved terrace-court with well-proportioned balusters and flower vases in Pulhamite stone. The paving used was rectangular, certainly more restful in the restricted area than the "crazy" pattern, and here were placed bird baths, sundials, figures and other garden ornaments in stone in which this firm specialises. (Silver-gilt Banksian Medal.)

Stove Plants.

Mr. L. R. Russell, Richmond, showed splendid exotic plants with ornamental foliage, making a very handsome group. As corner pieces were tall plants of Acalypha hispida (Sanderiana) with the long red inflorescences well developed; whilst in the centre—in the foreground—were plants of Nertera depressa, covered with the coral-red berries. Fine plants of Dracaena Victoria, Maranta insignis, Dracaena Margaret Storey, with broad leaves tinted with rose and yellow; Alpinia Sanderiana, Caladiums, Medinilla magnifica superbiens, Mussaenda frondosa, with broad, white bracts setting off the corymbs of golden flowers, and choice Crotons are some of the more noteworthy plants. (Silver Cup.)

Miscellaneous.

Messrs. R. and G. Cuthbert, Southgate, staged a bank of indoor-flowering plants in the large tent, the grouping for colour effect meriting praise. A bank of Standard Pelargoniums of the variety Galilee had on the one side finely-flowered plants of Streptosolen Jamesonii and on the other Standard Fuchsias, with a graceful Humea elegans as a foil, and grouped about with Viscaria Brilliant. Along the front were clumps of Delphinium Blue Butterfly, Ivy-leaved Pelargoniums, and Viscaria oculata coerulea. At points of vantage were patches of Scarlet Crassulas, and a free use was made of Ferns and Palms for greenery. (Silver Flora Medal.)

Messrs. H. Cannell and Sons, Eynsford, were awarded a Silver Banksian Medal for an exhibit of Zonal Pelargoniums and Roses.

Mr. Philip Ladds, Swanley Junction, showed a good selection of the newer Zonal Pelargoniums and other bedding plants. (Silver Banksian Medal.)

Mr. H. N. Ellison, Bull Street, West Bromwich, showed greenhouse Ferns and Cacti. (Bronze Flora Medal.)

Col. the Right Hon. Mark Lockwood, Romford (gr. Mr. Cradduck), showed a large group of about 100 pots of Fuchsias. They were young plants in 5 and 6 inch pots mainly, and represented an enormous number of varieties, but their uniform size and indiscriminate arrangement were not conducive to artistic effects.
play. (Standard Cup.)

Mr. G. R. Smith, New Thundersley, Essex, staged Cacti and succulents. (Bronze Flora Medal.)

Mr. A. H. Cole, Camberwell New Road, London, showed Pelargoniums and Carnations, but the staging never appeared to have been completed and the varieties were unnamed.

Mr. Vincent Slade, Taunton, exhibited Zonal Pelargoniums. (Silver Flora Medals.)

Messrs. Cannell and Sons, Eynsford, showed Pelargoniums, Roses and herbaceous plants. (Silver Banksian Medal.)

Messrs. Jarman and Co., Chard, showed their strain of Sweet Sultans, with Carnations, Roses and Sweet Peas. (Bronze Flora Medal.)

Messrs. John Peed and Son, West Norwood, put up well-grown and representative batches of Caladiums and Streptocarpus. The mauves, blues and pinks in the latter showed an excellent large-flowered strain. (Silver Flora Medal.)

Messrs. W. and J. Godfrey, Exmouth, staged a unique collection of Show and Regal Pelargoniums. Each plant was a specimen, and the varieties were associated with taste.

Messrs. Carter, Page and Co., London Wall, showed Dahlias, Violas and Pelargoniums. (Silver-gilt Banksian Medal.)

Mr. James MaoDonald, Harpenden, arranged a group of ornamental Grasses. (Silver Banksian Medal.)

Fruit.

Messrs. T. Rivers and Son, Sawbridgeworth, had one of the finest exhibits of pot fruit trees we have seen at an exhibition. All the trees were carrying splendid crops of choice fruit, which included Apples, Pears, Figs, Plums, Peaches, Nectarines and Cherries. The brightest fruits were Lady Sudeley Apples. There were a dozen or more splendidly-cropped trees of this early variety. Pineapple Nectarines looked very tempting, the fruits being very finely finished. The small Cherry trees were laden with ripe fruits of the varieties May Duke, Frogmore Bigarreau, Early Rivers, Governor Wood, and others. Choice Plums were seen in Reine Claude, Comte Althan, Belgian Purple, Jefferson, Late Orange, and Early Transparent Gage. The Peaches included Sea Eagle, Peregrine, and Kestrel. (Silver-gilt Cup.)

Messrs. James Veitch and Sons, Ltd., Chelsea, showed splendid fruit trees in pots, those trained as espaliers being strikingly good. A triple cordon tree of Plum Jefferson was laden with fruits from top to bottom. Peaches, Nectarines and Plums formed the principal subjects, and there were several trees of a sort, but all were of a uniformly high quality. A selection of the varieties included, Nectarines, Early Rivers, Précoce de Croncels and Lord Napier, of Peaches, Peregrine, Hale's Early and Kestrel, Plums, Early Transparent Gage, and of Apples, Lady Sudeley. (Gold Medal.)

Messrs. G. Bunyard and Co., Ltd., Maidstone, showed pot fruit trees, but the Apples and Pears were not quite ripe, and this fact detracted somewhat from the effect. We were greatly impressed with the excellence of two vines of Foster's Seedling Grape in pots, each carrying 14 well-developed bunches. Cherries were also good, the fruits hanging in dense clusters on trees of Turkey Heart, Noir de Schmidt, Montreuse de Mezel, Frogmore Bigarreau, nnd other varieties. Baskets of Strawberries looked very tempting, and there were also ripe Nectarines, Peaches and Figs. (Silver Cup.)

Messrs. T. S. Ware, Ltd., Feltham, also showed pot fruit trees, for which a Silver Knightian Medal was awarded.

Messrs. Ed. Webb and Sons' fine exhibit of flowers contained sixty fruits of Melons in the centre. International is a particularly handsome fruit, finely netted on the skin and said to possess excellent flavour. Peerless, Ringleader, Best of All, New Favourite (pointed out for its quality, but not so handsome as some), and Pride of Stourbridge are a selection. (Silver Knightian Medal.)

Messrs. Laxton Bros., Bedford, showed Strawberries in perfect condition—King George, The Bedford, The Queen, The Laxton, Givon's Late Prolific, etc. Without knowing their season and flavour it would be hard to choose the best from such fine sorts. (Silver Cup.)

The Bucks Tresco Nurseries, Ipswich, sent some trusses of their new Tomato, Bucks Tresco, to show its wonderfully heavy cropping qualities.

Cultural Commendation.

The Earl of Portsmouth, Whitchurch, Hants. (gr. Mr. R. Perry), was recommended this award for dishes of the Cherries Noir de Schmidt and Black Tartarian. The fruits were of extraordinary size and attracted very general comment.

Vegetables.

The Hon. Vicary Gibbs, Elstree (gr. Mr. E. Beckett), sent a representative collection of the vegetables for which his garden has become famous. Peas, Tomatos, Cauliflower, Artichokes, Aubergines, etc., were shown in first-class quality arranged in large dishes or columns or pyramids against a pale green ground. (Gold Medal.)

Sir Daniel Gooch, Hylands, Chelmsford (gr. Mr. W. Heath), showed an admirable collection of vegetables in baskets. (Standard Cup.)

Horticultural Sundries.

As usual at the Holland House Show, the sundries formed an interesting adjunct, illustrating the many points at which gardening is in touch with other industries. In the main these were grouped in a separate tent at the west of the grounds, but several of the most important were placed outside.

Mr. H. W. Cashmore, 96, Victoria Street, Westminster, showed some admirably modelled figures in lead of modern design with wrought ironwork. Mr. T. Crowther, 282, North End Road, Fulham, exhibited antique work with old garden ornaments.

Garden furniture and pottery was exhibited by Messrs. Castle's, Coldrum, Dryad Works, Hughes, Bolckow and Co., H. Jones, The Knox Guild, The Leyton Timber Co., Messrs. Liberty, Maggs, D. Roberts, and T. Syer.

Sprayers and insecticides were shown by Messrs. Cooper and Nephews, Four Oaks Co., Messrs. Hartjen, Jeyes, Lloyd, Price, Robinson, Sanitas, Ltd., The United Brass Founders, Ltd., Messrs. Voss, and E. A. White, Ltd.

Frames, garden lights, and devices connected with covering and heating were shown by Messrs. Chase, The Folding Span Light Co., The French Cloche Co., Handiframes, Ltd., The Pullen Burry Co., and Messrs. A. Roberts.

Garden pictures, plans, photographs, etc., were represented by exhibits from the Misses E. Adie, M. Coombes, E. Eggar, Farrer, M. Groves, M. Linnell, F. Pilkington, M. Schloesser, E. Stock, and Warrington, also from Mrs. McTurk, Mr. Robert Hughes, and Messrs. Thomson and Charman.

Among other exhibits of horticultural interest were those from The Acme Patent Ladder Co., Mrs. Burn, Messrs. Drew Clarke (ladders), Mr. Vernon Hill (slug traps), Mr. A. Johnston (loam), Mr. A. Key (lawns), Miss Mitchell (garden baskets), Mr. Pattisson (turf renovators, etc.), Mr. Philcox (ladders, etc.), Mr. J. Pither (Mushroom spawn), Mr. Prentice (fertilisers), Mr. H. Scott (loam), The Union of South Africa and Mr. E. Westmacott (South African produce). Messrs. Wakeley (Hop manure), Mr. Walters (steel garden stakes), and Mrs. Webb (nesting boxes).

THE LUNCHEON.

The members of the Society's committees and the judges of the show were entertained at luncheon on the opening day. In proposing the health of the Members of the Committee, and of the Judges, the President (Field-Marshal Lord Grenfell of Kilvey) said that many people, even Fellows of the Society, did not realise how many Committees there are working for the Society in the cause of horticulture. The present was a suitable occasion to draw attention to this point, as three new Committees had recently been added to the list.

Lord Grenfell proceeded as follows:—First we have the Wisley Development Committee—a committee consisting of eminent scientific and practical men, who have been appointed to advise the Council of the directions in which Wisley, and the work being done there, practical, scientific, and educational, can be made more generally useful and beneficial to the gardening interests of the country. This committee, though appointed less than twelve months ago, has held sixteen meetings besides many other sectional discussions, and has presented an invaluable report, which the Council is endeavouring to translate into action as far and as speedily as circumstances permit. The Council is exceedingly fortunate to have received such a large amount of assistance and excellent advice from Professor Bailey Balfour, of the Royal Society, and Regius Professor at Edinburgh, to whom the thanks of the whole gardening community are due. We are also equally fortunate to have been able to secure the services of Dr. Keeble, of the Royal Society, to undertake the chief direction and carrying into effect of what we hope, and fully expect, to prove to be the great improvements, practical, scientific and educational, which are now commencing at Wisley.

The Committee, which under the express sanction of the Board of Agriculture is dealing with the question of a National Diploma in Horticulture, has now received Mr. Runciman's approval of the scheme, and only last week held the first examination under it.

Then there is the Parliamentary Committee, which has been established to watch any measures introduced into Parliament in any way affecting horticulture, and to suggest desirable measures or propose amendments to existing regulations. This Committee has presented reports to the Council on the subjects of (1) seed-testing stations, (2) subsidies from public funds to co-operative organisations, (3) railway rates and conditions, and (4) the sale of wet coke by weight, on all of which subjects the Council has taken prompt action.

Then we have our Scientific Committee, which has done such admirable and valuable work for the Fellows ever since its establishment in 1868. After that we have our Fruit and Vegetable Committee, which is the oldest of all our Standing Committees, having been established in 1858, and having thus attained its 56th year of age. Next comes our Floral Committee, which is only one year junior to the Fruit and Vegetable Committee, and for 30 years these two Committees sufficed for the needs of the Society, and have done most useful and excellent work.

But in process of time the attention of a few amateurs concentrated itself to such an extent on the collection of Daffodils that it became necessary to establish another committee; and this was done in 1885, and its scope subsequently enlarged to include Tulips as well as Narcissi.

Our youngest Standing Committee, the Orchid, promoted in 1889, has been very far from being the least energetic or hard-worked. The development of Orchid growing during the last 25 years has been phenomenal, and the raising of hybrids seems likely to increase in future.

Last, but by no means least in the matter of expenditure, comes the Library Committee, appointed in 1910 to enlarge and extend our magnificent collection of books called The Lindley Library. And though so recently constituted the Council has, on the advice of this Committee, expended no less than £2,500 in the purchase of new books and the binding of old ones, some of the new ones being as old as 1616 and 1664.

These are our Committees. And magnificent work they are, one and all, doing, and great is the debt which the Council, and the Society, and the whole horticultural world owes to them for the gift of their time and their judgment. To say that none of them ever err would assume them to be superhuman, but though they, and the Council also, sometimes make mistakes, I venture to say the errors bear but an infinitesimal proportion to the good results they achieve.

Then, besides our Committees, at Chelsea, at Holland House, and at one or two other special shows—we have our judges, and greatly are we indebted to them.

The surprising thing is that all these genetlemen forming our Committees and acting as our Judges give their services freely, being glad to co-operate with our good old Society in promoting the Art we all love so well—the Art of Horticulture.

Lord Grenfell then paid a high tribute to the splendid work of the secretary, Rev. W. Wilks. To him the Fellows were largely indebted for the success the society had attained.

The Rev. W. Wilks, M.A., referred to the able manner in which Lord Grenfell filled the office of President, and his great courage in taking up the post after so able and eminent a President as the late Sir Trevor Lawrence. He was giving away no secret when he stated that all the members of the Council were glad to sit under him.

The Rev. J. Jacob responded for the Committees and Judges, and referred particularly to the desirability of furthering the interests of the library.

Publications Received.—***Babylonian Dates for California.*** By Paul B. Popenoe.—***Pomona College Journal of Economic Botany***, Vol. III., No. 2.—***Journal of Agriculture, University of California***, Vol. I., No. 9.—***Bulletin of Miscellaneous Information from Royal Botanic Gardens, Kew.*** Appendix II., 1914. Catalogue of the Library, additions received during 1913.—***Bird Studies.*** By W. P. Westell. (The Cambridge University Press.)—***Bee-Keeping for Profit.*** By W. S. Morley. (Cassell and Co., Ltd.) Price 1s. 6d. net.—***Annual Report of the Secretary for Agriculture, Nova Scatia, for 1913.*** (T. C. Allen and Co., Halifax, N.S.)—***Report of Experiments on Spraying Potatos for the Prevention of Patato Disease or Late Blight.*** By T. Milburn and R. G. Gaut; ***Scheme of Agricultural Education and Weather Observations, for 1913.*** (Lancashire Education Committee.)

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

June 16.—*Present:* Sir J. T. D. Llewellyn, Bart., V.M.H., in the chair; Messrs. W. Fawcett, A. Worsley, W. C. Worsdell, E. M. Holmes, J. R. Ramsbottom, G. Wilson, and F. J. Chittenden (hon. sec.).

Fasciated Daisy.—Mr. Worsley said that the fasciated Daisy which he sent to the last meeting comes true from seed.

Doubling in Claytonia sibirica.—Mr. Worsdell reported that he had examined the double Claytonia, which was shown at the last meeting, and found the doubling to be due to multiple dichotomy or fasciation of the flower, *i.e.*, the flower branches into a number of equivalent secondary flowers. These are of various grades of imperfect development, possessing no calyx, and sometimes no corolla. Some of the secondary flowers consist only of a small pistil and one or two stamens, and are stalked. The branching takes place within the calyx of the primary flower, which is thus common to the whole. In some flowers almost the only abnormality consists in the presence of an extra corolla within the normal one, the whorl of five stamens being present. In others petalody of some of the stamens has occurred.

"*Wild Almond*" *from the Cape.*—Mr. W. C. Worsdell exhibited the very hairy fruits of the so called "Wild Almond" of the Cape, Brabejum stellulifolium. The fruits contain a single seed, which has a flavour similar to that of the common acorn. The plant belongs tn the Proteaceae.

Leaf spots produced by red spider.—Mr. E. M. Holmes showed foliage of Prunus virginiana which had been attacked by red spider with the result that bright red spots had been produced upon it similar in appearance to those regarded as due to "burning" or sun-scorch.

Cabbage root maggot.—Several specimens of Brussels Sprouts, Cauliflower, etc., from various sources were shown attacked by the Cabbage root maggot, which appears to be very prevalent this year

Warts on vine leaves.—From Lowestoft came vine foliage showing numerous small swellings on the lower surface, the result of enlargement of cells in the tissues of the leaves following the keeping of the plants in a too close, moist, warm atmosphere.

Enlargement of cotyledons.—Mr. Chittenden showed a seedling Tomato about three months old in which the plumule and buds axillary to the cotyledons had been damaged early. He drew attention to the great increase in size and especially in thickness of the cotyledons which follows this kind of damage. He also showed a seedling of Radish about three weeks old which had been damaged by the removal of plumule and one cotyledon, in which the remaining cotyledon had enlarged to about three times the size of those on uninjured plants. In the case of the Radish a couple of apparently adventitious buds were developing about the base of the cotyledonary petiole. There was little difference in the size of the roots formed by the normal and damaged Radishes, but the root development in the case of the Tomato was slight.

Seedless Apples.—Mr. Chittenden also showed photographs of Apple Duchess of Oldenburgh, which had set in bags so that the flowers were not exposed to cross pollination, to illustrate the fact that some Apples were capable of setting seedless fruits under these conditions, while when exposed to cross pollination seed was set in the normal way.

Lesser Narcissus fly.—Mr. Chittenden also showed a specimen of Narcissus bulb sent him by Mr. Backhouse, with a number of the larvae of the lesser Narcissus fly feeding in the neck of the bulb under such circumstances as left little doubt that they were the originators of the attack, not merely followers feeding on damaged tissue due to some other and earlier attack.

CITY OF LONDON ROSE.

June 25.—The second annual exhibition of this society was held at the Cannon Street Hotel on the 25th ult. The competition was exceedingly good in nearly every class, and most of the exhibits reached a high standard of excellence. The greatest improvement in these respects was to be seen in the open amateurs' class, where Mr. Oswald Twines won the Challenge Trophy with splendid blooms. In the nurserymen's classes Messrs. Alex. Dickson and Sons clearly outclassed their competitors.

Nurserymen's Classes.

48 *blooms, distinct.*—Messrs. Alex. Dickson and Sons, Newtownards, Ireland, again won the Nurserymen's Challenge Trophy with a wonderfully good collection of blooms. The pale or blush-pink coloured Roses, such as Miss Connor (a charming new Rose), Oberhofgärtner Terks, A. Lindsall, and Yvonne Vacherot, were especially beautiful, as also were such reds as Edouard Bohane and H. V. Machin, and the Lyon Rose; 2nd, Messrs. B. R. Cant and Co., Colchester, whose blooms had evidently encountered stormy weather, showed excellent specimens of Mrs. Andrew Carnegie, Yvonne Vacherot, Augustus Hartman, Juliet and Mildred Grant; 3rd, Messrs. D. Prior and Son, Colchester.

12 *Varieties,* 3 *blooms of each.*—In this rather trying class Messrs. Alex. Dickson and Sons were an easy 1st. They not only showed 36 splendid blooms, but the colour arrangement was exceedingly effective. Their principal varieties were Mildred Grant, Lady Ashtown, Edouard Bohane, Florence Pemberton, and Lyon Rose; 2nd, Messrs. C. and W. Burch, Peterborough, who included magnificent blooms of Mrs. Amy Hammond; 3rd, Messrs. B. R. Cant and Co.

18 *Tea and Noisette Roses, distinct.*—The exhibits in this class were of only moderate quality, most of the blooms being weather-stained. Messrs. D. Prior and Son won the 1st prize; their best blooms were of Madame Jules Gravereaux and Maman Cochet; 2nd, Messrs. Alex. Dickson and Sons, who showed the varieties Mrs. Edward Mawley and Mrs. Foley Hobbs in good form.

18 *bunches, distinct.*—The 1st prize was awarded to Messrs. F. Cant and Co., who were the only exhibitors. The vases of Goldfinch, Rayon d'Or, Irish Elegance, and Gustave Regis were very beautiful.

Baskets of Roses.—These were not quite so good as is usual with this class. The 1st prize was won by Messrs. Alex. Dickson and Sons, whose 7 baskets were filled with such sorts as Irish Fireflame, Red Letter Day, and Conway Jones; 2nd, Messrs. Chaplin Bros., Waltham Cross.

New Roses.—Although the class for 12 blooms of Roses introduced within the past three years did not contain any blooms of superlative excellence the winning collection of Messrs. Alex. Dickson and Sons included good blooms of H. V. Machin, Duchess of Sutherland, Lady Greenall and Lady Barham. Messrs. Chaplin Bros., who were placed 2nd, showed Leslie Holland and Geo. Dickson in good form and colour: 3rd, Messrs. B. R. Cant and Co

Open Amateurs' Classes.

As in the nurserymen's class the Challenge Cup was won by the holder. This year Mr. Oswald Twines, Bedford Road, Hitchin, exhibited an even better collection than last year. Of the 24 blooms, in distinct varieties, Mildred Grant, Bessie Brown, Mrs. Edward Mawley, Mrs. Foley Hobbs, and Mrs. J. Laing were splendid. Mr. G. C. Sawday, Beechfield, Woking, won the 2nd prize with a collection which included fine blooms of Mildred Grant, William Shean, J. B. Clark, and Dean Hole.

Mr. G. C. Sawday showed the finest collection or 12 blooms of exhibition Roses, including a splendid bloom of Mildred Grant, whilst Avoca and Dean Hole were also very good; 2nd, Rev. F. R. Burnside, Great Stanbridge Rectory, Rochford.

The City of London Championship Trophy, which is for open competition and offered for the best 12 blooms of exhibition Roses, was won by Mr. H. L. Wettern with a splendid set of blooms; those of Mme. Jules Gravereaux and Dean Hole were magnificent; 2nd, Mr. John Hart, who showed the best exhibit of 6 varieties—3 blooms of each sort; those of Elizabeth and Mildred Grant were very fine.

The chief award in the class open to growers of fewer than 1,000 plants was won by Mr. C. Leslie, Epcombe, Hertingfordbury, whose very fine collection included Bessie Brown, Mildred Grant, Dean Hole, and Yvonne Vacherot; the last-named being judged the best bloom in classes 9 to 17 won the Silver Medal of the N.R.S.

Metropolitan Classes.

The Championship Trophy offered for competition amongst members growing Roses within eight miles of the Royal Exchange was won by Mr. A. E. Coxhead, 40, Ambleside Avenue, Streatham, whose 12 blooms included good specimens of J. B. Clark, Mrs. Stewart Clark, John Ruskin, and Florence Pemberton. The best exhibit of 6 blooms was shown by Mr. A. Wilkinson, Granville Road, North Finchley, whose chief specimens were of Florence Pemberton, Mrs. M. Soupert, and Mrs. J. Laing.

In the classes for Roses grown within five miles of the Royal Exchange Mr. R. de Eschofet, Dulwich, won the chief award; his blooms of Margaret, Florence Pemberton, and Mrs. T. Roosevelt were of good size and quality.

Decorative Classes.

The exhibits in these classes were especially fine, and showed a marked advance on those of last year. The 12 bunches of Roses, distinct, shown by Mr. H. L. Wettern, were of equal merit to any similar exhibit that we have seen. The chief varieties were American Pillar, Goldfinch, Tea Rambler, Lady Hillingdon, and Duchess of Wellington.

The bowl of Roses arranged by Mrs. A. C. Brown, Prokes Lodge, Reigate, was a particularly charming effort; the combination of Richmond and the foliage of Rosa rubra was very pleasing. This lady also showed the best vases of Roses, which were arranged with equal skill.

Non-Competitive Exhibits.

Messrs. Wm. Paul and Son, Waltham Cross; Mr. Walter Easlea, Leigh-on-Sea; Messrs. Paul and Son, Cheshunt; and the Rev. J. H. Pemberton contributed honorary exhibits of Roses.

RICHMOND HORTICULTURAL.

June 24.—The fortieth annual show of the above society was opened by the Duke and Duchess of Teck in the Old Deer Park, Richmond, Surrey, on this date. Owing to the May frosts and the recent severe storms the exhibits were not of such high quality as during the past few years; the falling off was particularly noticeable in the classes for Rose and Sweet Pea. Fruit was better shown, and although the exhibits of vegetables were not so numerous as usual the quality generally was exceedingly good. It is interesting to record that the energetic hon. secretary, Mr. W. J. Cook, is the present Mayor of the borough.

OPEN CLASSES.

Groups of Plants.

The premier group exhibited by Lady Max Waechter, Terrace House, Richmond (gr. Mr. H. Burfoot), although a trifle methodical in arrangement contained a number of well-grown plants of useful size, and was bright and attractive. The chief flowering plants were Hippeastrums, Lilium, Carnations, and Gloxinias; 2nd, Mrs. Brown de Berry, Oaklands, Wimbledon, with a heavier arrangement, which, however, contained some very good pot Salpiglossis, Coleus and Dracaena Lindleyana.

The semi-circular groups, as provided for in class 3, were not quite so attractive as in former years. Dr. Lacroze, Roehampton (gr. Mr. F. Cresswell), won the 1st prize. His group was rather sombre in appearance, but the groundwork of Adiantum cuneatum and the several Orchids were highly meritorious; 2nd, K. J. Messom, Esq., Strawberry Hill (gr. Mr. F. Taylor); 3rd, Mr. C. Burge, Teddington, whose arrangement was the most ambitious, but lacking in detail.

The two exhibitors in the class for 6 Palms exhibited large and healthy specimens. Mrs. Brown de Berry won the 1st prize, and Lady Max Waechter was 2nd. The 1st prize collection of 6 Orchids was exceptionally good; Dr. Lacroze included Laelio-Cattleya Canhamiana, L.-C. Ascania × C. Mendelii and Odontoglossum crispum. Mrs. Spence, East Acton (gr. Mr. H.

Knightley), and Mrs. V. Arbuckle, Richmond (gr. Mr. L. Lawrence), won the prizes for 6 exotic Ferns in the order named, and these positions were reversed in the class for 6 fine foliage plants. The Caladiums shown in class 7 were of splendid quality, all the plants being well furnished with large and beautifully-coloured leaves. 1st, Lionel Warde, Esq., Petersham (gr. Mr. A. Allum); 2nd, Mrs. Arbuckle. The 6 Coleus with which Mr. L. Warde won the 1st prize were models of high-class cultivation and training, and Mrs. Spence was equally successful with 6 Fuchsias. Mrs. V. Arbuckle, showing unusually fine specimens, was awarded the 1st prize for 4 Aspidistras; and Mr. L. Warde won the 1st prize for 6 tuberous Begonias, whilst Mr. G. Atkins was similarly successful with 9 Streptocarpus.

Roses and Sweet Peas.

Richmond in the past possessed a great reputation for the exhibits of cut Roses; then came the inevitable lean years, when it seemed that the glory had departed, but during the past three years the Rose exhibits more than regained their former importance. But although through unfavourable climatic conditions this very high standard was not maintained this year there were many beautiful blooms on view.

The principal class was for 48 distinct varieties, 3 blooms each. The 1st prize was won by Messrs. R. H. Harkness and Co., Hitchin, whose exhibit attracted a deal of admiration. The outstanding varieties were Kaiserin A. Victoria, Dean Hole, Lady de Bathe, Caroline Testout, Mildred Grant, White Killarney, Edward Mawley, and Bessie Brown; 2nd, Messrs. F. Cant and Co., Colchester, whose blooms lacked the substance and form of the former; the exceptions were those of Caroline Testout, Lohengrin, and J. B. Clark.

Messrs. W. and J. Brown, Peterborough, won the premier award in the class for 24 varieties, 3 blooms of each, where he showed splendid triplets of J. L. Mock, J. B. Clark, Mrs. Theodore Roosevelt, William Shear, and Florence Pemberton; 2nd, Messrs. R. H. Harkness and Co., who staged good sets of Caroline Testout, Bessie Brown, Countess of Caledon, Killarney and Elizabeth. Messrs. W. and J. Brown also won 1st prize with 12 varieties in 3 blooms of each. Showing the variety J. B. Clark in splendid form, Messrs. W. and J. Brown won the 1st prize for 12 blooms of any one variety, H.P. or H.T.; and Mr. Hy. Drew, Longworth, who showed Mrs. Cornwallis West in good condition, was 2nd.

The best 12 Tea Roses of any one variety proved to be the set of Mrs. Foley Hobbs shown by Mr. John Pigg, Royston; and Mme. Jules Gravereaux by Messrs. G. and W. Burch was placed 2nd.

In the amateurs' classes Mr. G. Sizmur, Ottershaw, won the 1st prize for 24 blooms distinct; and Mrs. Peters Wood, Weybridge, was similarly successful with 12 varieties. The best collection of 9 varieties of Sweet Peas was shown by Mr. A. W. Perkin; this exhibit, which clearly outpointed the others, included especially good vases of King Manoel, Rosabelle, and Sunproof Crimson and Melba.

The exhibits of hardy herbaceous flowers provided one of the best features of the show. Mr. L. Warde's winning collection of 24 bunches, included Clamatis erecta, Iris anglica. and Lilium croceum; 2nd, Messrs. W. and J. Brown.

Decorative Classes.

The centre of the large Rose tent was occupied with the table decorations, which were very attractive. The 1st prize, arranged by Mrs. A. R. Bide, Farnham, which consisted of Gerbera hybrids and Asparagus plumosus nanus, was especially dainty and charming. In the class which required 3 vases of flowers Messrs. Robinson, Carshalton, who used pink Carnations and Gladiolus, also made a very effective display.

The basket of plants which won the 1st prize for Mr. L. Warde was an exceedingly successful effort. Messrs. W. and J. Brown won the 1st prize for a basket of Roses.

Fruit and Vegetables.

Sir W. Greenwell, Marden Park, Woldingham (gr. Mr. W. Lintott), who was the only exhibitor, was awarded the 1st prize for a splendid collection of fruit, in which the Eminence Melon, Foster's Seedling and Black Hamburgh Grapes, Early Rivers Nectarine, and Brown Turkey Figs were of very high quality. Mr. J. B. Hilditch won 1st prizes for Melons and Peaches, and the Marquis of Ripon for Cherries.

The collections of vegetables, although fewer in number than usual, were nearly all composed of exceedingly good produce. Three 1st prizes for collections were won by Miss Langworthy, Hollyford, Berkshire (gr. Mr. T. J. Brown).

Non-Competitive Exhibits.

The following awards were made to exhibitors: Gold Medal to Mr. L. R. Russell, Richmond; Small Gold Medal to Messrs. W T. Ware, Ltd., Feltham; Silver-gilt Medal to Mr. W. Thompson, Sheen; Silver Medals to Messrs. J. Jackman and Son, Woking; Messrs. W. and J. Brown; J. Naylor and Son, Long Ditton; Henry Newman, Watford; and H. E. Fordham, Twickenham.

CROYDON HORTICULTURAL.

June 24.—The forty-seventh annual summer show of this society took place on Wednesday, June 24, in the Park Hill Recreation Grounds. The weather was extremely fine and the attendance of visitors in consequence very good, the receipts being far in excess of those of previous years. Roses were very well shown both in the amateurs' and the nurserymen's sections, and the exhibits were numerous. For forty-eight distinct varieties, Messrs. B. R. Cant and Sons obtained 1st prize and won outright the Croydon Challenge Cup. Messrs. D. Prior and Son, Colchester, were placed 2nd with a very creditable exhibit. In the class for twenty-four distinct varieties, Messrs. Chaplin Bros., Ltd., of Waltham Cross, were awarded the 1st prize, and Mr. Geo. Prince, of Longworth, the 2nd. Mr. Prince won 1st prize in the class for twelve blooms of the same variety, Messrs. Chaplin Bros. being placed 2nd. A class for nine novelties evoked keen competition among the nurserymen. Messrs. B. R. Cant and Sons obtained the 1st prize, and Messrs. D. Prior and Son the 2nd. In the class for twelve bunches of garden Roses Mr. Geo. Prince was placed 1st, Mr. Ernest Hicks, of Wallingford, obtaining 2nd place. Messrs. Frank Cant and Co. were disqualified by reason of having staged too many trusses, but a special Silver Medal was awarded to their group for excellence of quality and display. A new class for five baskets of cut Perpetual Roses created a good deal of interest, and those of Messrs. Chaplin Bros. and Messrs. D. Prior and Sons were respectively 1st and 2nd of a very good collection of exhibits. In the amateur class for twenty-four blooms of distinct varieties, Dr. T. E. Pallett, of Earl's Colne, won the Silver Cup, Mr. H. L. Wettern, who won it last year, being second on this occasion. A Silver Medal was awarded for a bloom of Lady Barham in Dr. Pallett's collection. For nine Roses of a single variety, Mr. G. Curnock Sawday, Beechfield, Weybridge, obtained 1st prize; and for eighteen Teas of not fewer than twelve varieties, Mr. F. Slaughter, Steyning, was placed 1st, a Silver Medal being awarded to his bloom of Comtesse de Nadaillac. Keen competition was evoked by a class, new to this society, for dinner-table decorations of Roses, restricted to ladies. Mrs. H. L. Wettern obtained 1st prize with a really beautiful table, and Mrs. A. E. Brown, Brokes Lodge, Reigate, who was placed 2nd, arranged her exhibit with no less taste. In the class for stove plants, the Silver Cup was won by Mr. F. C. Bause, nurseryman, Portland Road, South Norwood. His collection was a magnificent one and well deserved the award.

For groups of plants arranged for effect, F. Dyer, Esq., J.P. (gr. J. Randall), Park Hill Row, Croydon, carried off the 1st prize; and for a group of stove plants, F. Link, Esq., J. P. (gr. J. Slater), was placed 1st. In the classes for gardeners there were not quite so many exhibits of fruits and vegetables as usual, but there were several groups of distinct merit. Sweet Peas were particularly well shown, and there were a number of creditable exhibits. For twelve bunches, in the open class, F. H. Franks, Esq. (gr. N. Humphrey), Loampits, Tonbridge, won the 1st prize. In the cottagers' classes there was a slight falling off, owing partly to the destruction by hail a few days before the show of large portions of the crops. Several non-competitive groups were well staged, among others one by Mr. C. Blick, of Hayes, and one by Mr. H. Lakeman, of Thornton Heath, both of whom showed Carnations. Mr. T. Butcher, Croydon, showed a group of plants and specimens of floral decoration. Messrs. J. Cheal and Sons, Crawley, and Messrs. G. Bunyard and Co., Maidstone, showed fine collections of hardy herbaceous flowering plants. Among the sundries there were several interesting exhibits. Messrs. Jeyes displayed their well-known horticultural specialities, and Messrs. Robinson Bros. showed Carmona fertiliser and Alpha sprayers. The show was a particularly successful one. During the day a number of the flowers were sold, the proceeds from this source (over £4) being given to the Royal Gardeners' Orphan Fund. The grounds of Alderman Allen, J.P., which adjoin the Park Hill recreation ground, were thrown open for inspection, and the privilege was much appreciated by the visitors.

BIRKENHEAD AGRICULTURAL.

June 24 and 25.—The exhibition of the above society occupied two days and proved very successful, the Roses and Sweet Peas especially being of exceptional merit. For a collection of Ferns and Selaginellas, occupying 20 square feet, D. Macphee, Esq., Arrowe Park, Cheshire, was awarded 1st prize, and F. W. Bagshaw, Esq., Woodcote, Rock Ferry, 2nd. For one stove or greenhouse plant in bloom Mr. Macphee again took the lead, and also for six stove plants. For three Ferns, Mr. Bagshaw took first place, and also obtained the same position for a single specimen—a fine Nephrolepis. For two Fuchsias, and also for three tuberous-rooted Begonias, J. H. Kenion, Esq., Roselands, Rock Ferry, was awarded the 1st prize. Herbert Harding, Esq., Stanton, Bebington, won the 1st prize for three Pelargoniums, and for twelve cut blooms of Roses. For eighteen vases of Sweet Peas E. M. Allen, Esq., Formby, was placed 1st with good spikes of Margaret Atlee, R. F. Felton, and others. In the class for twelve Carnations, Messrs. Page and Whitley, Boughton, Chester, obtained 1st place. Miss Newsham, Old Hall, Ormskirk, was successful in several classes, one being that for table decorations, in which Roses were used with pleasing effect. The class for a collection of fruit and vegetables was unfortunately not contested, there being only one exhibitor (Mr. Macphee). There were several very fine non-competitive exhibits. A Gold Medal was awarded to Messrs. Bees, Ltd., Sealand Nurseries, Chester, for Delphiniums and herbaceous flowers. The same award was given to Messrs. Young and Co., Cheltenham, for a fine exhibit of Carnations; to Messrs. R. Ker and Sons, Aigburth, for a table of Paeonies; to Mr. A. F. Dutton, Iver, for Carnations; and to Mr. J. Lee, Higher Bebington, for fruit trees in pots. Silver Medals were awarded to Mr. H. Middlehurst, Liverpool, for a fine collection of Iris; to Mr. R. Wright, Formby, for Sweet Peas; and to Mr. S. A. Haines, Birkenhead, for miscellaneous cut flowers; a Bronze Medal being allotted to Mr. W. Maddocks, of Birkenhead, for Roses. Messrs. Dickson, of Chester, and Messrs. McHattie and Co., Chester, staged interesting displays of cut flowers in the main avenue.

LAW NOTE.

APPLE PULP IN RASPBERRY JAM.

At the Marylebone Police Court recently a grocer was convicted for selling, to the prejudice of the purchaser, Raspberry jam which contained at least 10 per cent. of Apple pulp contrary to the Sale of Food and Drugs Act.

Defendant had given notice to appeal at the London Sessions, but Mr. Bodkin, who appeared on behalf of the Marylebone Borough Council, which had instituted the prosecution, said that the appeal had been abandoned, and he successfully applied for costs.

Answers to Correspondents

Almond Twigs Blistered : *E. Y.* The plants are affected with Peach leaf curl, a disease due to the attack of the fungus Exoascus deformans. Cut off all shoots that are attacked to sound wood at least 6 inches below the part diseased.

Apple Trees Diseased : *G. C.* You are right in your diagnosis of the complaint—Sphaeropsis is present. Your treatment is the correct one, and should prove effective provided you commence at an early stage.

Black Currants with "Big Bud" : *J. C.* You are right, the disease affecting your Black Currants is "Big Bud." All the infected buds should be picked off and burnt, but spraying would be of no use this season, as it is too late. Next year, however, you might try that remedy.

Canterbury Bell : *A. E. O.* It is a common occurrence for the top bloom on a spike of irregular flowers, such as digitalis, to become regular ; a condition known as peloria.

Carnations with Hard Centres : *F. A. A.* The malformed flowers exhibit prolification. From some cause or other the centres have continued growing, forming a large, bud-like growth, with leafy structures.

Cherries and Figs Diseased : We cannot find any pest on the fruits themselves ; but probably the tree is diseased at the roots.

Chrysanthemums Injured : *A. E. G.* The Chrysanthemums are infested with mites. Drench the plants thoroughly with a solution of quassia.

Creosoted Boxes for Seeds : *P. T. L.* We should not advise you to use creosoted boxes for propagating purposes, as creosote is a powerful poison. Stockholm tar could, however, be used for the some purpose without so much risk of injury.

Damson Fruit : *P. Becr.* The diseased fruit, known as "pocket plums," is caused by a fungus exoascus pruni. Collect and burn all diseased fruits to prevent further infection.

Employment in London Parks : *W. H. W.* The best way to obtain employment in a cemetery would be to approach the superintendent direct. In the *Horticultural Directory* there is a list of the public parks and cemeteries, with the names of the superintendents. If you desire work under the London County Council, you should apply to the Superintendent, Parks Department, 11, Regent Street, London, W.

Figs Failing : *Y. Z.* The cause of the failure of your Figs is to be found in the atmospheric conditions under which they are grown. There is too little ventilation, and this has favoured the growth of Botrytis, from which the trees are suffering.

Fungi in Potting Soil : *C. L.* Sprinkle kainit over the compost and incorporate it thoroughly with the soil a month before the latter is required for use.

"Fungus" on Lawn : *W. N.* The plant is not a fungus, but a lichen, and may be eradicated by soaking the grass with sulphate of iron, 1 oz. in one gallon of water. Continue to apply the specific until all the foreign growth is killed.

Gardeners' Association : *Rose.* The Association you are thinking of is probably the British Gardeners' Association. The secretary is Mr. Cyril Harding, Ulysses, Fortune Green, London, N.W. With reference to examinations, you should write to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W.

Gloxinias Injured : *G. W. E.* The plants you send are injured by mites. They should be well sprayed at once with a quassia solution, taking care to ensure its penetrating into the crevices and between the hairs on the foliage.

Grapes : *W. B. F.* It is too late to save your crop this year, but next year you should thoroughly spray the vines with Bordeaux mixture (half strength) just before the flowers expand.

Humea elegans : *Roger Lear.* The injury has been caused by an excess of moisture at the roots.

Labour Required for 4½ Acres : *F. B.* You ask for advice as to the labour required for 4½ acres of strong land, consisting of lawn, flower, and kitchen gardens, and also to look after cow, pigs and poultry. Much depends upon the extent of the lawn and the number of pigs and poultry. Probably, in ordinary circumstances three men, with occasional extra help during the busy season, would be sufficient.

Leaves from Plum Trees : *Inquirer.* No. 4 is affected with the silver-leaf disease. There is nothing to show what is wrong with the other specimens.

List of Nurserymen and Florists : *O. B.* The *Horticultural Directory*, price 1s. 3d. post free, contains a list of all the chief nurserymen and florists in the United Kingdom. It can be obtained from our publishing department.

Manetti Stocks for Budding : *Constant Reader.* You erred in planting so deeply as 1 foot ; 6 inches would have been ample. Do not bud the stocks until August ; in the meantime keep the ground well hoed. and the plants will soon strengthen. When you are ready to bud the stocks hoe the soil away to a depth of a few inches to enable the bud to be inserted within, say, 2 or 3 inches from the roots. The soil should not be returned after budding, but instead, the buds should be allowed to remain exposed, binding them with Raffia in the usual manner.

Melons Diseased : *A. S. B.* The Melon plant is affected with Cucumber mildew. It should be sprayed every fourth day with liver of sulphur in the proportion of 1 oz. to 4 gallons of water.—*W. G. W.* The fruits have been injured by insects at an early stage, and fungi have entered through the wounds. Take measures to prevent fruit that is developing from becoming infested with insects.—*Baker, The Grange.* The root of the Melon has been killed by a fungus known as Botrytis. In future, before planting Melons you should sterilise the soil by heating or steaming it, or sprinkle it with kainit a month before it is used.

Melons Failing : *A. H.* We have carefully examined the specimen sent, but fail to find any trace of fungus or other disease, and are at a loss to account for the cause of the failure.

Names of Plants : *Purliy.* Nos. 1 to 6 are garden Roses, which we do not recognise ; 7, Escallonia rubra ; 8, Cotoneaster horizontalis ; 9, Veronica incana ; 10, Erigeron philadelphicus. —*Dendron.* Echinocactus Eyresii.—*Dublin.* Roses : 1, Celine Forestier ; 2, Gloire Lyonnaise ; 3, Pink Damask ; 4, Mme. Lavalley ; 5, Flora ; 6, Reine Marie Henriette ; 7, Mme. Jos. Courbet.—*Jas. W. Hubble.* Rose Mme. Isaac Periere. — *W. and S.* Hordeum jubatum.—*G. J. W., Sussex.* We believe the Rose to be the white De Meaux, one of the lovely old miniature Provence Roses. —*F. A. E.* Dendrobium Dalhousieanum, as it is generally called in gardens. The original name, however, is D. pulchellum. D. pulchellum of gardens is a dwarf, trailing species.—*Rev. Thomas Boyd.* Rose Edmond Proust (Wichuraiana).—*F. L.* Rhododendron (Azalea) calendulaceum var.—*N. H.* 1, Phalaris arundinacea variegata ; 2, Zephyranthes carinata ; 3, Anchusa sempervirens ; 4, Polemonium coeruleum album ; 5, Santolina Chamaecyparissus ; 6, Deutzia scabra flore pleno.—*H. Burton.* Calycanthus floridus, Californian Allspice.—*E. B. H.* 1, Jasminum floridum ; 2, J. revolutum.

Nectarines with Rusty Skins : *S. J.* The fruits have been punctured by insects at an early stage. Next season take measures to prevent infestations of sucking insects.

Peach Fruits Spotted : *F. D. E.* The spotting is caused by a fungus, and will not disappear. Spray the plants next season as soon as the fruits have set with liver of sulphur.

Peach Leaves Shrivelling : *W. J.* See reply to *E. Y.* under "Almond Twigs Blistered." The vine leaves are not affected with either fungous or insect pests.

Phlox decussata : *Somerville.* The plants have been injured by eelworms at the roots, for which there is no cure. Burn the affected plants, and sterilise by baking the soil in which they have grown.

Peach and Nectarine Leaves Turning Brown : *G. H. T.* The trouble has been caused by wrong cultural treatment, and is not due to either fungous or insect pests.

Peas Unhealthy : *F. W. N.* The trouble is due to "stripe" disease, which is just making its appearance in the plants. No cure for this disease is known, but you should take the precaution to grow the plants in sterilised soil. If sown out of doors select a fresh site next year, as far removed from the old one as possible.—*M. C.* Try the effect of watering the plants twice a week with sulphate of potash in solution, one oz. in each gallon of water.—*L. C.* Water the plants with a solution of sulphate of iron, 1 oz. in 2 gallons of soft water at intervals of four days.

Pansies Dying : *M. G.* The plants have been killed by the fungus Botrytis, which has entered at the roots. Secure fresh stock and plant in another part of the garden.

Peach Leaves Diseased : *P. C. S.* Your trees are attacked with the shot-hole fungus, Cercospora circumscissa, and should be sprayed with the ammoniacal solution of copper carbonate about every fourteen days, the recipe for which is as follows :—Mix the carbonate of copper, 1oz., and carbonate of ammonia, 5oz., in a quart of hot water, and when quite dissolved add 16 quarts of cold water. The solution may be applied to quite young Peach leaves, as it will not harm them as would the Bordeaux mixture.

Primula Seedlings : *F. E. G.* A suitable compost for growing seedlings of the Primulas you mention consists of rich, fibrous loam, leaf-mould, and sharp sand, in equal parts. Prick the seedlings off into deep boxes, and grow them on in a cool, shady frame.

Salvia argentea : *J. Baker.* This is probably the plant meant. It is a biennial, and may be sown at any time now, either in pots, or in the open border. Large rosettes of white, woolly leaves are produced the first year, and the plant flowers in the early summer of the following year.

Strawberry Plants : *F. C. M.* At an earlier stage the plants have been attacked by aphis, and a fungus has developed in the honey dew deposited by the insects.

Tomatos : *J. C.* A thorough examination of the Tomato and leaf you send fails to disclose any fungus disease. The failure is probably due to some error in cultivation.—*A. S.* It is impossible to name a variety of Tomato from a single fruit.

Tomatos Diseased : *H. E. H.* Canker is the cause of the trouble. Soak the soil thoroughly with sulphate of potash in solution ; 1 oz. in one gallon of water.

Vine Leaves : *J. D.* and *H. F. K.* The trouble is due to some external cause ; no disease is present. Attend carefully to such cultural details as ventilating the house and regulating the amount of atmospheric moisture.

Various Plants Diseased : *J. W. G.* The plants are all attacked by the fungus Botrytis. The disease is present in the soil, and was probably introduced with the manure. There is no cure for the plants which are affected with this disease. Sterilise the soil either by steaming or baking it.

Communications Received.—W. F.—H. V. W.—E. H.—I. B. P. E.—W. J.—F. N.—N. B.—C. C.—Pea—W. D. A.—T. A. H. J.—H. M.—L. M. B.—A. G.—W. J.—G. H.—A. E. O.—F. C.—"Burford"— F. B.—S. A. W.—W. E. T.—H. S.—H. G. B.—H. Corder—Constant Reader—S. A.—E. M.—C. H.—J. McN.—M. S.—H. R.—A. M.—R. H.—G. H. J.—Ku Son.

THE
Gardeners' Chronicle
No. 1,437.—SATURDAY, JULY 11, 1914.

CONTENTS.

Arnold Arboretum, the .. 25
Aubergine, the 37
Biennials, hardy 29
Blight fungus in the soil, persistence of 37
Books, notices of—
  Beginner's Garden Book 28
  My Garden in Summer 28
Bulbs, prizes for 37
Clerodendron splendens 34
Cucumbers, bitter .. 44
Davenham and the Gardeners' Royal Benevolent Institution .. 31
Delphinium Emiliae .. 30
Forestry, conference on 37
Gardeners' Company's present to the Lord Mayor 37
Gardeners' Royal Benevolent Institution .. 37
Gardeners, young .. 31
Holland House Show .. 34
Ivy stems, the severing of 30
Metrosideros lucida .. 31
Narcissus fly, the lesser 31
National Diploma of Horticulture examination 30, 31
Obituary—
  Chamberlain, Joseph .. 42
  Cuthbert, G. 43
  Folkes, Henry 43
  Sangwin, W. 43
Peaches and Nectarines in the open 30
Plants, new or noteworthy—
  Othonna pachypoda .. 27
  Syringa Wilsonii .. 27
Plant notes—
  Ribes Henryi 29
  Vallota purpurea .. 30
Pollen, to preserve .. 37
Potato digger, a new .. 37
Rockery, grass in the .. 30
Rose Lady Waterlow .. 37
R.H.S. Tulip Nomenclature Committee .. 37
Seeds, dead or alive? .. 34
Societies—
  British Gardeners' Association .. ..
  Hort. Club .. ..
  National Carnation and Picotee 37
  National Rose 38
  National Sweet Pea .. 37
  Royal Agricultural .. 41
  Wolverhampton Floral Fête 40
Underley Hall, visit to .. 37
Wasps 31
Watercress, a substitute for 37
Week's work, the—
  Flower garden, the .. 32
  Fruits under glass .. 32
  Hardy fruit garden, the 33
  Kitchen garden, the .. 33
  Orchid houses, the .. 32
  Plants under glass .. 33

ILLUSTRATIONS.

Clerodendron splendens. (Coloured Plate.)
Cuthbert, George, portrait of the late 43
Highbury, Birmingham, residence of the late Mr. Joseph Chamberlain 35
Odontonia Cleverleyana 29
Othonna decurrens, 27; O. pachypoda 28
Syringa Wilsonii 26

THE ARNOLD ARBORETUM.

Impressions by the Hon. Vicary Gibbs.

I AM just returning from a visit to the Arnold Arboretum, and I think it may interest some of your readers to have a short account of this delightful botanic garden, although no doubt abler pens than mine have in past years dealt with the same subject in your columns.

However this may be, if anyone wants to read a picturesque description, not only of the Arboretum and the work done there by its famous director, Professor Sargent, but also of the expeditions which he has organised to China in search of rare plants, he cannot do better than get a book called *The Incandescent Lily*, by Gouverneur Morris, whose charming style I can admire though I cannot emulate. If a more precise and prosaic account be desired, it is to be found both in *Harper's Magazine* and in a comparatively recent number of *American Country Life*, but as these productions may not be readily available to English readers, I will try to while away the idle hours on shipboard during a calm passage by setting down a few notes of my own, which, if they have no other merit, will at any rate describe at first hand things worthy to be seen.

The Arboretum is situated in Jamaica Plain, just outside Brookline, which is a suburb of Boston. Its acreage is about the same as that of Kew Gardens, but owing to the fact that it lies in undulating country, with fine rolling hills, instead of in a flat river-valley, it has the appearance of being far bigger. Unlike Kew, the collection is confined to hardwood plants capable of growing out-of-doors, and neither Alpines, herbaceous plants, nor those requiring artificial heat are to be found there. Indeed, beyond a small propagating house, there is no glass to be seen. Unlike Kew, too, it is intersected by several broad driving roads, so that those who are infirm can see a great deal of the Arboretum without leaving their carriages. Automobiles, however, are not allowed in the grounds, and, I think, very properly, for their presence would detract materially both from the security and enjoyment of students, for whom the gardens are primarily intended.

The climate is, of course, much more extreme than ours, and it is no uncommon thing for the thermometer to fall 20° below zero; as against this the very hot summers ripen the wood perfectly, and enable plants to stand cold which would be fatal in England. Although the number of evergreens, outside certain hardy Conifers, which will stand a Massachusetts winter such as that of 1913-14 is very small, yet it is remarkable that some of the deciduous subjects come through the ordeal better than they would do in England north of London. For instance, take the case of Chionanthus virginicus, popularly known as the Fringe Tree. This in the eastern states makes a large shrub, or sub-tree, is perfectly hardy, and when loaded with its feathery, white panicles of flower in early June is a glorious sight, yet at my home in Aldenham, Hertfordshire, it does not grow vigorously, nor ripen its young wood completely, and consequently does not flower in the same profusion. The explanation of this plant, the deciduous Magnolias, the Styraxes and many other deciduous trees, doing so much better across the sea is simple, and is nothing more than the absence there of spring frosts. In America there is really no spring, and they plunge in a few days from piercing cold to burning heat. When I was there in May the thermometer was frequently well over 90 in the shade. Their winter is terrible, but the moment it is over it is done with for good, and every little twig is completely ripened, hence the wonderful way in which their plants flower and fruit.

With us, however, we never know when we are safe from injury from cold, and when the sap is up even 3° or 4° of frost is more damaging to plants than zero in their dormant state. At Aldenham, for instance, there is not one month of the twelve in which we have not had to put up with frost in one or other of the last thirty years.* As a set-off to this advantage for American horticulturists, the following common evergreens which adorn English gardens cannot stand the winter in the Arboretum:—Our Yew (Texus baccata), Mahonia, Barberry (Berberis Aquifolium), Box (Buxus of all kinds), our Holly (Ilex Aquifolium), all Laurels, *i.e.* Cerasus Pseudo-cerasus (for in America Laurel is the popular name given to Kalmia), and, of course, all Aucubas are absent. Roughly speaking, it may be said that though the Mother Country is far ahead in the wealth and variety of its evergreens, yet many of the deciduous shrubs grow better, and flower and fruit more freely in Eastern North America than they do with us.

As an instance of this I may mention first of all the Syringas, which are deservedly most popular shrubs with our cousins. When I arrived these plants were at their best, and I can truly say that no one has seen Lilacs at their best who has not seen them in America. All the finest varieties are grown, and they are usually massed together and very carefully tended, all the dead flowers being removed, just as we are in the habit of doing with choice Rhododendrons. The individual plants grow to a great size, and I saw really giant specimens of S. pekinensis and S. japonica. I believe 1914 was a particularly fine year for them, but certainly the blaze of colour produced was such that I could not have conceived possible, and shall never forget.

Other plants which I saw in flower, and in which we are far surpassed, are the Dogwoods and shrubby Honeysuckles; the queen of the former is undoubtedly Cornus florida, and its variety C. f. rosea. This though it will live with us is generally a poor bloomer, but as I saw it, covered all over with big, flat, white, or clear rose-pink, flowers, was one of the most beautiful sights imaginable.

When at Rochester in New York State a little later I saw a large plant of C. Kousa in flower, but though quite satisfactory it certainly cannot compete in size or brilliance of bloom with C. florida. C. Nuttalli, which is by some considered the best of all this family, I was not fortunate enough to see, and I believe it is confined to a more westerly region than any into which I penetrated. The shrubby Honeysuckles are almost as striking a feature as the Lilacs, and have one advantage over them, that their fruit is very showy in autumn and winter. As they thrive perfectly well even if they do not attain quite the same size in England, we ought to make more general use of them than we have done hitherto. The kinds which I noticed growing in the Arboretum, and which struck me as most attractive, were Lonicera Ruprechtiana, with bright yellow flowers; L. Korolkowii floribunda, with pink flowers and markedly glaucous foliage; L. amoena; and L. tatarica lutea, both with showy pink flowers, and to these should perhaps be added L. Maackii, whose flowers are large and white.

Another May flower which aroused my enthusiasm, though its blooms only last in beauty for three days, was Halesia tetraptera. Of course, as a shrub this is a well-known, old-fashioned plant in England, though now not often grown, being known here as the Snowdrop Tree, and there as Silver Bell; but not far from the entrance to the Arboretum, and on the bank of a beautiful lake, modestly named Jamaica Pond, I saw the tree form, which was quite new to me, some 20 feet high with a stem about 1 foot through. When loaded with its bright, white, hanging flowers it was indeed worth going, as I had gone, a long way to see it.

---

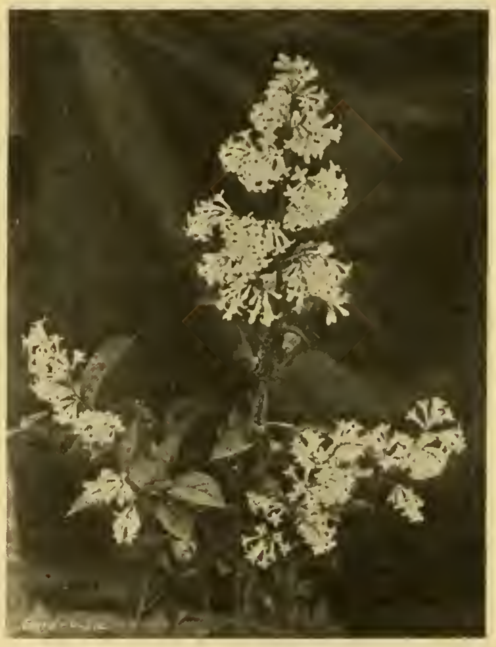
* Since my return home, and since this paper was written, I have learnt that on May 31 or June 1 last we suffered from 10 degrees of frost, which did great damage.

Professor Sargent has been remarkably successful in retaining the natural appearance of the grounds while keeping plants of the same botanical order together, and so far as possible keeping closely allied Orders in conjunction (*e.g.*, the Tulip Trees follow the various Magnolias). This has been achieved by judicious selection of the spot for planting the different genera, where they can both feel and look at home. Thus the Willows flourish on a marshy flat, and the Conifers make a fine show on the steep sides of a grassy hill. Under the broad-leaved forest trees a natural undergrowth of Vaccinium, Sumach, Golden Rod, and various dwarf plants is encouraged, because not only does it turn a gorgeous colour in the fall, but has the practical advantage of conserving the leaves and saving cost of mowing.

On entering the Arboretum one finds immediately on the right the Administration Building, presented by a generous citizen of Massachusetts named Horatio Hunniwell. It is an unpretentious but well-constructed, red-brick building, with every possible precaution against fire. It contains the offices of the professor and his various assistants, and an admirable herbarium. I was struck with the promptitude with which that distinguished botanist, Mr. Rehder, produced for my inspection dried specimens of the foliage of diverse rare Aesculus at which I wanted to look. The nuts of all kinds of trees, preserved in bottles, form, I should fancy, an unsurpassed collection, and the excellence of the Arboretum arrangements was tested by the quickness with which my wish to compare all the different Hickory nuts was gratified.

Although the late Mr. Hunniwell did a fine thing in giving this building, it is surprising how few rich Americans have interested themselves in this great national possession, and how few of them, comparatively, whether rich or poor, know or care anything about it. Indeed, it is hardly an exaggeration to say that it is better known with us than its own country. Excellent as it is it is gravely in want of two important things—land and money. It is true that, as I have said, it is about as large as Kew, but the trees are young, the majority of them not more than 30 years old, and will soon want more room; indeed, in places they are overcrowded already, and they grow much faster there than in England. I saw an Oak, believed to be a cross between our pedunculate and sessile forms, which was only 15 years old, and which I should have judged from my English experience to be at least 30. It costs, too, far more to maintain trees properly there than here. Not only is labour more highly paid, but much more of it is essential owing to the plague of insects of various kinds, such as the gipsy moth, which is liable to attack almost any tree except the Ash and its relatives. The annual bill for spraying in the Arboretum alone is appalling, and in the case of healthy, robust fruit trees, such as the Apple and Cherry, if they are left unsprayed for three consecutive years they are not merely divested of leaf but killed outright by the tent caterpillar. I myself saw young Oaks of which the stem was so covered by a brown, hairy caterpillar, of which I do not know the name, that it was almost invisible.

Furthermore, though the rainfall in the vicinity of Boston is much heavier than in that of London, it is much less evenly distributed, and a great deal of watering is requisite to keep young or newly-moved plants in life. Again, the Arboretum being situated close to a great and increasing city like Boston, adjoining land is steadily increasing in value, and becoming ripe for building; although at the moment there is a fair amount which could be bought at a reasonable price, yet in a very short time there will be none available, and now, alas! when it is to be got there is no fund from which a purchase could be made.



[*Photograph by C. F. Ball.*

FIG. 12.—SYRINGA WILSONII : COLOUR OF FLOWERS PINK.

Although the Arboretum is worthy of being a national institution, being far away the greatest botanical collection of hardy plants in America and needing nothing but money to become the first in the world, yet I believe I am right in saying that it receives no national nor State subsidy. In these circumstances it is devoutly to be wished that some public-spirited American should endow it with a sum which would put it out of danger of being neglected or falling into decay at that time (I trust far distant) when the marvellous energy and capacity of its present director shall have ceased to be devoted to its upkeep. Professor Sargent is second to no man living in the services which he has rendered to horticulture. Not only is this great Arboretum mainly the creation of his brain, but he has organised a succession of syndicates which have combined to send distinguished explorers such as Wilson to out-of-the-way parts of China, Japan, Korea, and other places.

Nor has he only done his collecting by deputy, but has himself travelled often and far and endured much hardship in the course of his fruitful botanical researches. Although his office work and correspondence are naturally heavy, by rising early and sitting late he manages to find time to be much in the grounds, keeping a sharp eye on the cultivation. Having been privileged to accompany him I can answer for it that he knows every corner of it, as if it were his own beautiful private garden in Brookline.

Like all good gardeners the Professor is always ready to help his many friends with counsel as to how to plant or beautify their grounds, for both he and his son stand high in repute as landscape artists and designers. He is, too, most open-handed in the distribution of surplus plants and seeds, and speaking personally I can only say that without his liberal help the Aldenham collection would be comparatively meagre.

I suppose every collector has a speciality, and finds one genus more attractive than any other. Certainly in the Professor's case it is the Crataegus that stands first, and, *per se aut per alium*, he has literally searched "every hollow and dingle and dell" over the broad acres of North America in pursuit of them, and a large hillside at the farthest end of the Arboretum now displays the trophies of his zeal. I really do not know exactly how many he has introduced (indeed, some folk think that he has carried sub-division too far, on which point I am not competent to express a judgment); but I do know that there were between 600 and 700 in flower this spring, and that great numbers were so distinct that the veriest tyro would not confuse them. The merits of this genus are so high and various that they ought as they become known to lead to heavy planting of American thorns on our side. They are almost all perfectly hardy, constant, and profuse flowerers, with showy fruits, and in many cases brilliant autumn colour. Against these charms there is but one fault to be set, viz., that there are too many of them. I will add the names of a few which were particularly fine when I saw them in flower this May:—Crataegus mollis, C. submollis, C. lauta, C. Arkansana, C. succulenta, C. viridis, C. pruinosa, and lastly C. geneseensis, which I saw growing wild in the valley of the Genesee River after I had left Massachusetts. *Vicary Gibbs.*

(*To be concluded.*)

NEW OR NOTEWORTHY PLANTS.

SYRINGA WILSONII, SCHNEIDER, N. SP.

Several new Chinese Lilacs flowered last May in the Glasnevin Botanic Gardens, and the best of all from a garden point of view was Syringa Wilsonii. Although the bushes are only 2½ feet high they flowered freely, and the sweetly-scented drooping flowers of a soft salmony-pink colour were attractive, even at a distance. The panicles of flowers are terminal, from 3 to 5 inches long; the individual flowers are not quite half an inch long and closely set on the pedicels. In *Plantae Wilsonianae* they are said to be white or lilac. The leaves are narrowly oval, with pointed tips, from 2 to 3 inches long, glabrous on both surfaces save the veins, which are hairy. Syringa Wilsonii is said to grow from 6 to 20 feet high, and was found by Mr. E. H. Wilson in Western Szechuan and Tachienlu at an altitude of 7,000 to 10,000 feet. Other new species of Lilac that flowered at Glasnevin in May included Syringa pinnatifolia, illustrated in *Gardeners' Chronicle*, April 18, 1914 (p. 269). The flowers are small and white, somewhat resembling some of the Privets. S. Sargentiana has acuminate leaves 4 inches in length by 2½ inches in breadth, and a sturdy habit promising to make a strong bush. The dense, nodding panicles of flowers are each some 3 to 5 inches long. The flowers are purple-red on the exterior of the tube and brighter coloured within, being half an inch in length. *F. Ball, Glasnevin Botanic Garden, Dublin.*

OTHONNA PACHYPODA.*

The new Othonna described below is a plant of striking habit, as may be seen from the reproduction of Mr. Lynch's photograph (fig. 14). The short, stout stem and the slender, trailing branches are remarkable in the genus. The plant photographed was collected by Professor Pearson on barren, stony ground in the Knechts Vlakte district, near the Varsch River, Western South Africa. It flowered at the Cambridge Botanic Gardens in December, 1912. Mr. Lynch also forwarded to Kew a piece of the bark from the main stem; it consists of more than one layer and in texture resembles that of the Birch; it is thin and translucent, and of a pale yellowish-brown colour.

The genus Othonna is a member of the tribe Senecionideae, and belongs to a group of five genera which are with a few exceptions entirely South African. Its nearest allies are Euryops (about 30 species) and Gamolepis (14 species). On account of a false appreciation of the style the genus was for a long time considered to belong to the tribe Cynaroideae; but the style has neither the appendix nor the external ring of hairs nor articulation so characteristic of that tribe, and is quite like that of Senecio; as the disk-flowers are sterile it remains undivided, as in most other flowers under similar circumstances. The genus is distinguished from Senecio on account of this sterility of the disk flowers.

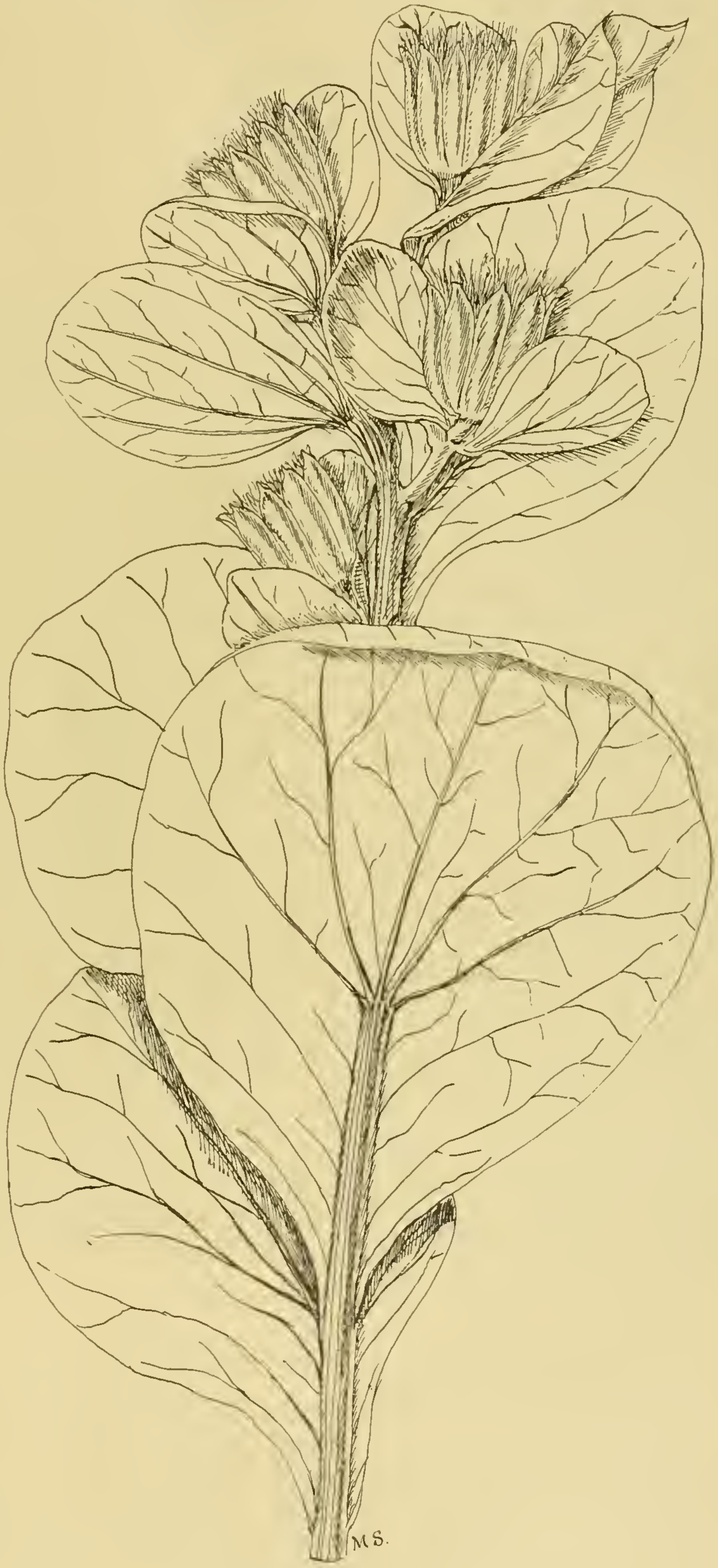


Fig. 13.—Othonna decurrens : flowers yellow.

About 80 of the 90 species of the genus are confined to the Cape, and, like numerous other genera which have their headquarters there, a few stragglers spread into Tropical Africa towards the east and west coasts, but mostly in Angola. Very few species are in cultivation in Europe, the one most universally met with being known under the name of O. crassifolia, Harv. It is an excellent plant for hanging baskets on account of its xerophytic nature, and consequently its resistance to extremes of moisture and temperature. The flower-heads are produced throughout the greater part of the year. L. H. Bailey (*Encycl. Amer. Hort.* 1901, p. 1,180) has changed the name of this plant to O. capensis, and he points out the confusion in nomenclature arising from the use of the name crassifolia applied to it by Harvey. A brief account of the synonymy is as follows: Linnaeus (Mantissa i. 118) described an Algerian plant as Othonna crassifolia; but this was subsequently recognised to be congeneric with a Persian plant which was the type of the genus Othonnopsis founded by Jaub. and Spach. Later Harvey in dealing with the genus for the *Flora Capensis* used the name crassifolia for an entirely different plant from the Cape, overlooking the fact that this name had already been applied by E. Meyer to another and different species of Othonna. Although Meyer's plant was considered by De Candolle to be a variety of O. amplexicaulis of Thunberg, there is always the chance in such instances that the reduction might not have been justified, and that the older application of the name might have to be revived. In such a case as this, therefore, there is much to be said in favour of the American custom of "once a synonym always a synonym," and the writer considers that Othonna crassifolia should be called O. capensis to avoid any further confusion.

---

* Othonna pachypoda, Hutchinson, sp. nov. Caulis erecta, valde robusta, circiter 15 cm. alta, 3 cm. diametro; rami numerosi, graciles, dependentes, usque ad 60 cm. longi, teretes, cortice pallide brunneo obtecti, glabri. Folia sparsissima, lineari-spathulata vel lineari-oblanceolata, apice obtusa vel rotundata, 3.5-6.5 cm. longa, 4-8 mm. lata integra, subcarnosa, glabra. Capitula in corymbis 2-3-floris longe pedunculatis disposita; pedunculi primarii gracillimi, usque ad 15 cm. longi, pallide virides, glabri; pedunculi secondarii 2.5-4 cm. longi, pergraciles. Involucrum subcampanulatum, 7 mm. longum; bracteae plerumque 5, oblongo-lanceolatae, obtusae, virides, margine anguste membranaceae. Flores radii plerumque 5, flavi; corollae tubus cylindricus, 2.5 mm. longus, glaber; limbus anguste oblongus, apice tridenticulatus, vix 1 cm. longus, 2.5 mm latus, 4-nervius, glaber; stylus longe exsertus, ramis obtusis 2 mm longis; achaenia oblonga, glabra; pappi setae numerosissimae, circiter 2 mm. longae, albescentes. Flores disci circiter 15, flavi; corollae tubus inferne cylindricus, superne anguste campanulatus, 3.5 mm. longus, glaber; lobi 5, triangulari-lanceolati, 1.25 mm. longi; antherae 1.75 mm. longae; achaenia linearia, 2.5 mm. longa, glabra; pappi setae quam in floribus ♀ multo pauciores. South Africa; Western Region; Vanrhynsdorp Div.; Knechts Vlakte district, near the Varsch River, Pearson, 6396. Type in Kew Herbarium.

Many other species besides O. capensis are well worthy of cultivation, and those especially which are provided with tuberous roots would not be at all difficult of introduction. Perhaps the most remarkable species in the genus is one discovered by Dr. F. C. Wellman in the Benguello district of Angola at an altitude of 5,000 feet. It was described by the writer in the Kew *Bulletin*, 1907, p. 50, as O. decurrens, in reference to the decurrent leaves (see fig. 13). The stem is simple and stout, and about 1½ foot high, and the leaves are large and orbicular and placed in an erect position on and closely appressed to the stem, and when viewed from the back appear to be peltately attached. This plant is one which would probably succeed in a stove, and would be a useful addition on account of its remarkable habit. A somewhat similar species, but with more elliptic-lanceolate leaves and smaller flowerheads (O. disticha), occurs in the Transvaal.

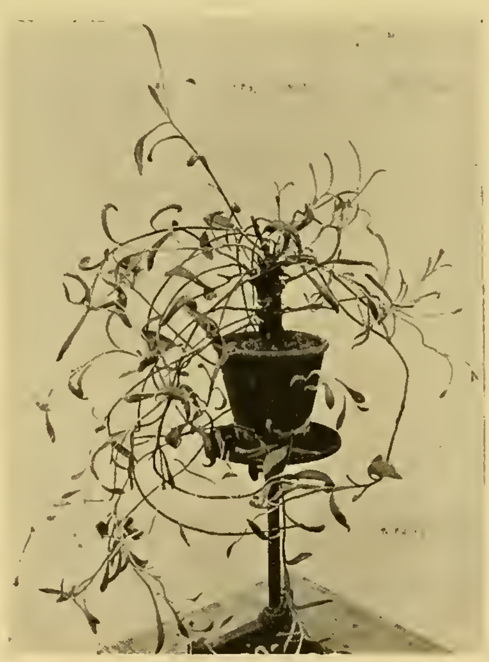
Description of the new species:—Stem erect, very stout, about 6 inches high and 1¼ inches in diameter, branches numerous, slender, drooping, up to 2 feet long, terete, with smooth, pale-brown bark. Leaves very scattered, linear-spathulate or linear-oblanceolate, obtuse at the apex or rounded, 1¼-2½ inches long, 2-4 lin. broad, entire, somewhat fleshy, glabrous. Flowerheads 2-3 together, corymbose; primary peduncles very slender, up to 6 inches long, pale green, glabrous; secondary peduncles 1-1½ inch long, very slender. Involucre somewhat campanulate, 3½ lin. long; bracts mostly 5, oblong-lanceolate, obtuse, green, with narrowly membranous margins. Ray-flowers mostly 5, yellow; corolla-tube cylindrical, 1¼ lin. long, glabrous; limb narrowly oblong, tridenticulate at the apex, scarcely ½ inch long; 1½ lin. broad, 4-nerved, glabrous; style much exserted, with obtuse branches about 1 lin. long; achenes oblong, glabrous; setae of the pappus very numerous, about 1 lin. long, whitish. Disk flowers about 15, yellow; corolla-tube cylindrical in the lower, narrowly campanulate in the upper part, 2 lin. long, glabrous; lobes 5, triangular-lanceolate, ⅔ lin. long; anthers ⅔ lin. long; achenes linear, glabrous; setae of the pappus much fewer than in the ray-flowers. *J. Hutchinson, Kew.*

NOTICES OF BOOKS.

Mr. Bowles' Summer Garden.*

Mr. Bowles' summer volume is like his former one, *My Garden in Spring*, very discursive and very instructive. Readers with a fastidious literary taste may resent the blend of familiarity, flippancy, and irrelevancy with which he addresses them; indeed, one begins to long for a page, or even a paragraph, without the perpetually recurring "I" and "my." It would have been so easy to cast many of the sentences so as to avoid the personal pronoun without masking the personal experience. Howbeit, the author succeeds very well in conveying the impression of perambulating a singularly well-stocked flower garden with an intelligent listener. What though he splits an infinitive in imparting the secret of how to obtain the good form of Wistaria multijuga? The secret is invaluable, and should save many an amateur from that most aggravating experience, purchasing a plant, perhaps at a long price, and, after waiting perhaps years before it flowers, finding at last that he has been supplied with the wrong thing. It is, indeed, well to see a new species in flower before investing in it. The present writer has shared Mr. Bowles' experience with the dingy, dowdy Geranium platyanthum (p. 101).

The cultural advice given in this book will be found most useful, especially in respect of some of the less common plants; but the choicest paragraphs are those which reveal cryptic characteristics in plants which are by no means rare. For instance, not one gardener or amateur in a thousand (the present writer being in the majority till he read page 37) knows how to distinguish between a water-loving Iris and one that demands well-drained soil—an important distinction in the treatment of new species. In writing of Iris fulva Mr. Bowles lets us into the secret:—"It is one of the Irises that proclaims to the world at large its thirsty disposition by the possession of dark spots in the leaves, best seen when a leaf is held up against the light" (p. 37). Irises of dry ground, like I. germanica, have leaves of uniform green. Mr. Bowles is too frank to let it be supposed that he found out this peculiarity for himself. He proceeds to quote from the monograph of Mr. Dykes, to whom he attributes credit for the discovery.



Photograph by R. I. Lynch.

Fig. 14.—Othonna pachypoda, sp. n.: flowers yellow.

In the same generous spirit he treats of the structure of sepals in the Dog Rose, explaining how, of the five, two are bearded, two are smooth, and the fifth has one edge bearded and one smooth (p. 53). Instead of letting this pass (as pass it might for the majority of readers) as a piece of original observation he quotes from early botanists, when Latin was the universal language of science, to prove that they were perfectly familiar with the peculiarity; but he goes on to give the result of his own genuine research into the purpose of that peculiarity.

It is the same throughout the volume. Sandwiched between passages of the wildest, often amusing, irrelevancy are pieces of information which will stick, or ought to stick, in the memory of every true gardener. Of the irrelevancy here is a fair example:—

"The single crimson [Rose] was one of the most precious of the many plant treasures that made up the first armful of plants that kind Dr. Lowe of Wimbledon gave me from his rich store of varieties. Introduced to him by letter, I was rather nervous of my first visit to the man who knew so much, who had made his collection of British Lepidoptera so complete that when over sixty he started to study and collect Coleoptera —that is to say, beetles, but not those that the cook calls beadles, and I love that silly story so well you must please let me tell it, in case you like silly stories, too. 'I can't stop 'ere, mum,' said the new cook, 'the kitchen's that full of beadles.' And the prim missis replied, 'Anyway, cook, you should spell the word with a T.' And the surprised domestic gasped, 'Lor! mum, I never 'eard 'em called teadles before!'"

More germane to horticulture is a comment upon the florist's choice of names for varieties. Dealing with the different forms of Chrysanthemum maximum the author launches into one of his wayward digressions:—

"Next I rank Edward VII., and a variety of it called Edward VII. Improved, which I always feel sounds rather disrespectful to a great memory; though not so bad as a description I heard of a diseased Potato, which ran: 'Edward VII., badly warted, and the skin showing pink between the black warts.' I must digress further to have a grumble at the awful results that sometimes follow on the bestowal of a person's name on a plant. One would think it harmless enough to allow a new Carnation to be named for one, as Americans say; but I found in a Carnation list some years ago descriptions something like these:—'Miss Evangeline Tomkins, very free, pale flesh, with large crimson spots'; 'Mrs. Rory O'More, deep red inclining to purple, of full habit, but warranted not to burst.' And I have lately seen with a shock that, as a Delphinium, I am 'over 6 feet high, but have a large black eye which is very telling. Stock limited.' If the latter refers to Bank stock, I am sorry to say it is but too true."

Gardening is a grave, sometimes a melancholy, business, so one may be grateful to a writer who imparts a little levity into his discourse thereon.

A reviewer, however, is not to be lulled into harmlessness by any number of jokes, old and new, so in parting with Mr. Bowles' cheerful chapters this reviewer begs to remind him that Alfred the Great was not "his Majesty" (p. 4), Henry VIII. being the first English monarch to assume that inflated style. His predecessors on the throne were content to be addressed as "your Grace."

If Mr. Bowles' Geranium Traversii has "rather handsome, dark green leaves" it is very different from the present writer's, which clothes itself with pretty foliage of a glaucous tint.—*Herbert Maxwell, Monreith.*

The Beginner's Garden Book.*

We do not think that the author of this well-printed book can be said to have solved the difficult problem of how to combine instruction in gardening with the scientific study of plants. In his opening chapter Mr. Allen French treats of "the purpose of a plant," and instead of dealing in simple fashion with the plain facts he endeavours to circumvent difficulties. Thus, in describing the germination of a pollen grain, he states that "the grain opens and its contents work into the pistil until they reach the ovary." The description cannot be said to be inaccurate, yet it is certainly misleading. Fig. 4, illustrating the fruit of the Pear, bears the legend, "The seeds and thickened calyx of the Pear."

---

* *My Garden in Summer.* By E. A. Bowles, M.A. London: T. C. and E. C. Jack.) 1914. Price 5s. net.

* *The Beginner's Garden Book.* By Allen French. (The Macmillan Co., New York.) 4s. 6d. net.

It will be news to many that the number of stamens in a flower is "usually three or four." Nor do we think that the questions which are appended to the chapters are always happy. For example, what answer should a beginner give to such questions as these :—"What is the purpose of a plant?" "What does a plant need before it can flower?"

Much in the chapters on saving of seed, potting, seed testing, etc., is useful, but the chapter entitled "The Life of a Plant" contains statements which require correction; thus on page 68 occurs the assertion : "This seems to show that a lighter liquid will force its way into a heavier liquid, even passing through a membrane first. This is called osmosis." It is not. Nor is it correct to attribute the rise of sap to the leaves (pp. 69-70) to the fact that the thinner solution (from the roots) "is always pressing upward." The fact is that the author, like so many before him, has found, but failed to overcome, the great difficulty of teaching botany and gardening side by side to their mutual illumination. He evades the difficulty by giving simple but inaccurate explanations, or by telling the children facts which, if they are to be of intellectual value, must be discovered by the children themselves. We could have wished that he had thrown over the attempt to combine botany with gardening, and had contented himself with giving instruction in garden practice only. For on this ground the author is sound and sure, and looked at as an introduction to practice the work has many merits.

Written for American children, it should prove useful to the British teacher of school gardening, for it is full of good teaching ideas, which a wise teacher is always willing to appropriate and apply in his own work.

HARDY BIENNIALS.

(*Continued from p.* 3.)

ERYNGIUM.

Among the Eryngiums, or Sea Hollies, there are several biennial species. Of these, E. giganteum is the best. It is handsome with its glaucous foliage and ivory-white involucres, and grows from 1 to 2 feet high. E. Rothenbergii, blue, and about the same height, is also good. Sow in the open in June or July, and under glass from March to May.

GILIA.

There are two very beautiful plants recognised as biennials among the Gilias. These should be sown about June or July for flowering the following year, the latter month being the better of the two. Gilia aggregata, about 2½ feet high, has flowers of various colours—shades of scarlet, pink, white, etc. The newer G. coronopifolia (see fig. 111 in *Gard. Chron.*, October 20, 1906) is a valuable and beautiful flower, with blooms of a rich and uncommon shade of red. These do not always winter well.

GLAUCIUM.

An effective plant for the border or the large rockery is Glaucium leiocarpum, an uncommon Horned Poppy, with fine orange-red flowers. It grows about 15 inches high.

HESPERIS.

The Double Rockets, old-fashioned and beautiful flowers, varieties of Hesperis matronalis, frequently exhaust themselves after flowering, and ought to be treated as biennials. Hesperis tristis, the Night-scented Stock, is prized for its fragrance at night, and makes a good biennial. It grows from 1 to 2 feet high, and likes a dry place.

HEDYSARUM.

The French Honeysuckle, Hedysarum coronarium, is a good border biennial, with red or white flowers, and grows about 3 feet high. This plant and H. microcalyx, rose-purple, 2 feet high, can be readily raised from seeds and grown in common soil.

HUNNEMANNIA.

The beautiful Hunnemannia fumariaefolia is best treated as a biennial, sowing the seeds from May to July in the open air, either where the plants are to bloom and thinning out the seedlings, or in small beds. The seedlings from the latter should be transplanted when small to where they are to flower. H. fumariaefolia grows about a foot high, and has graceful foliage and yellow flowers.

LUNARIA BIENNIS.

This is the common Honesty, a plant not so popular as at one time, but liked by some for the value of its silvery seed vessels for winter decoration. These, by the way, are sometimes coloured with gold paint. It is too well known to require description, but there are red, purple, and white varieties. Honesty may be sown in the open from May until July for blooming the following year. It grows well in either sun or shade, but is rather coarse as a flowering plant.

MECONOPSIS.

The Meconopsis is a charming and effective plant, which has come into much favour in late years. The seeds can be sown in the open in May or June, but it is preferable to sow them under glass in April or May, pricking out the seedlings in the ordinary way, and planting them out in early autumn. They generally like partial shade and a moist but well-drained place. The best species are M. aculeata, 2 feet, purple; M. nepalensis, 3 to 5 feet, yellow; M. punicea, 1½ foot, crimson; M. racemosa, 2½ feet, lilac or purple; M. sinuata latifolia, 2 feet, purple; M. simplicifolia, 3 feet, violet-purple; M. Wallichii, 4 to 6 feet, pale blue; and M. integrifolia, 3 feet, yellow. *S. Arnott.*

(*To be continued.*)

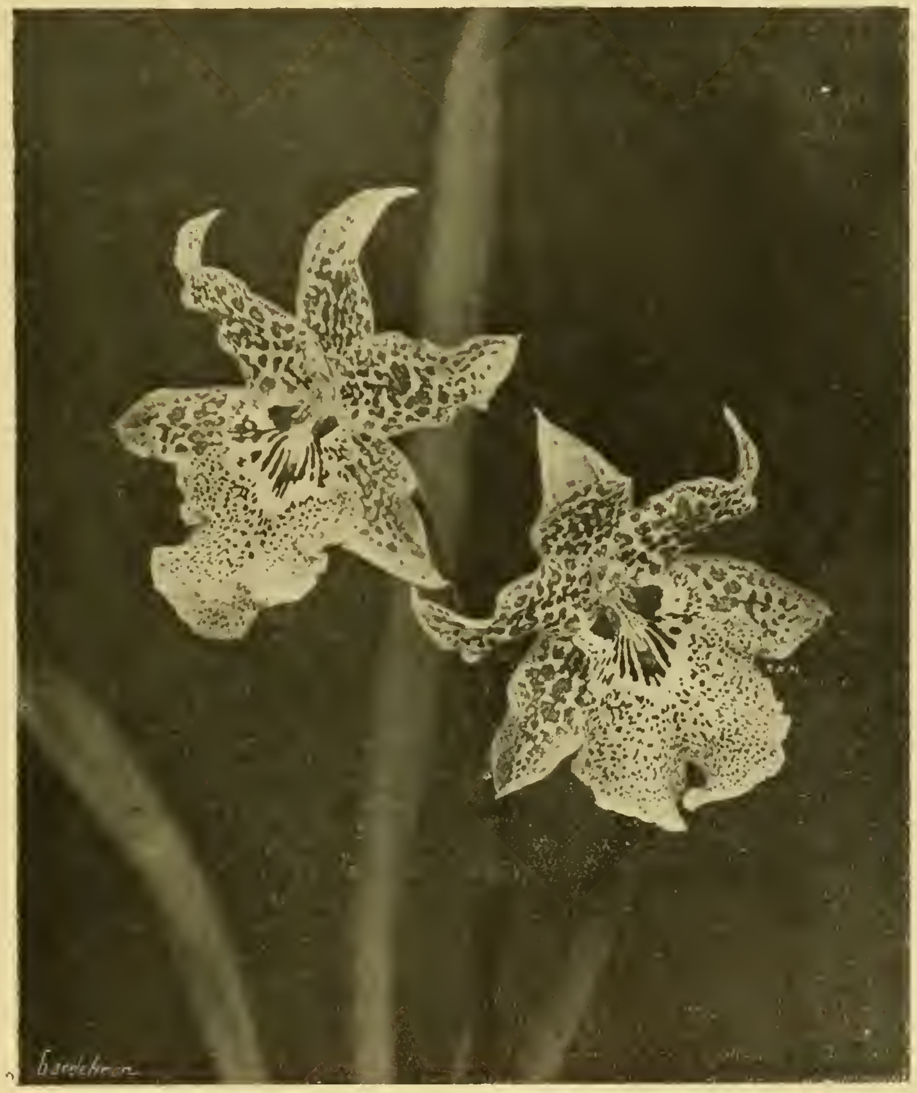


Fig. 15.—Odontonia Cleverleyana; flowers white, spotted with rosy colour.
(R.H.S. Award of Merit, June 30, 1914. See p. 15.)

PLANT NOTES.

RIBES HENRYI.

The publication of a figure of Ribes laurifolium, Janczewski, in the *Botanical Magazine* of March tempts me to write about a stray seedling of a species of Ribes which came up here two or three years ago in a sowing of seeds collected in Szechuan by Wilson (No. 584), and distributed under the name Sinowilsonia Henryi, Hemsl. The plant flowered this year as it did last, and proves to be Ribes Henryi, Franchet, apparently a rare species, even in herbaria. I have seen no record of it in cultivation in Britain. The identification has been made possible by the fuller description of the species given by Janczewski in the *Bulletin of the Cracow Academy* for October, 1913. The plant is hardy, flowering about the same time as its ally, R. laurifolium, Janczewski, and is an interesting companion to that species, and like it is dioecious. Our plant at Edinburgh is male, and will supply material for the completion of the specific description which is wanting in regard to the male flower. The specimens which Janczewski described had a history somewhat like that of our Edinburgh plant—"A single plant came up amongst seedlings of R. laurifolium, Janczewski." It was a female, and produced fruit by crossing with R. laurifolium, Janczewski. Doubtless this hybrid is now in cultivation in Europe. Now that we have the male plant here, we shall hope for an opportunity of fertilising a female plant of the species. R. Henryi, Franchet, resembles R. laurifolium, Janczewski, being, like it, spineless, and producing entire, leathery, persistent leaves, but is readily distinguished, for it is viscid, glandular not glabrous, and the fruit is described as green, glandular, hispid, not pubescent and red. *R. L. Harrow, Royal Botanic Garden, Edinburgh.*

VALLOTA PURPUREA.

This plant, which is popularly termed the Scarborough Lily, is a very showy bulbous plant that flowers, as a rule, towards the end of the summer and in autumn. On this account it is particularly valuable for the decoration of the greenhouse, as many of the summer flowering occupants are by that time on the wane.

When first introduced in 1774 this Vallota was placed in the genus Amaryllis, which at that time embraced the Hippeastrums, while it has also been included in the genus Cyrtanthus. There is a story of its popular name having been derived from a ship, which was carrying a number of these bulbs, being wrecked off Scarborough, and as some of them were washed ashore they were collected and they flowered in due course.

There is a fair amount of individual difference to be found in the Vallota, and several varietal names have been applied to them. A very old and, at the same time, well-marked variety is eximea, for which the late Mr. William Bull, of Chelsea, obtained a certificate as long ago as 1863. This is of rather dwarf habit, with large round bright scarlet flowers with a whitish throat. Another known as magnifica, of bold growth, with large, richly-coloured blossoms, is very fine, when it can be obtained true; but this and other names are often bestowed upon individuals not the equal of the original ones. The old type of Vallota purpurea itself is also not met with to the same extent as it at one time was, for very large importations have within the last decade or so been sent to this country from South Africa, and many of these are less sturdy in growth, and with flowers of a more starry outline than those of the typical kind. These imported bulbs sometimes flower in the spring in the first season, while occasionally pinkish and salmon-coloured blossoms crop up, but I have never known these to become permanently established.

Hybrids between this Vallota and garden varieties of Hippeastrum have been talked about, but I am not aware of any authenticated case. At all events, they are not in general cultivation. A very pretty hybrid was, however, raised in Sir Trevor Lawrence's garden in the eighties, between Vallota purpurea and Cyrtanthus (Gastronema) sanguineus. To one of these under the name of Gastronema hybrida was given a first-class certificate by the Royal Horticultural Society in 1885, and in the following year the deeper-coloured Gastronema hybrida rosea received a similar award. Large numbers were about this period raised in the nursery of the late Mr. William Bull at Chelsea, and were in time distributed under the name of Vallota hybrida. In the case of these the Vallota was the female or seed-bearing parent.

Nerines and many other bulbs resent being disturbed at the roots more than is absolutely necessary, so that the potting compost should be of a good lasting nature. Yellow loam, a liberal sprinkling of sand, and a little fine brick rubble will suit Vallobas well, and if the loam is of too heavy a consistency a small amount of peat may be added. Another point to be observed is that after flowering the plants should have a good light position assigned them, as it is at that season they make their principal growth. *W. T.*

NATIONAL DIPLOMA IN HORTICULTURE.

The first examination of professional gardeners for the National Diploma in Horticulture (Part I.), recently established by the Council of the Royal Horticultural Society, with the approval and co-operation of the Board of Agriculture, was held on June 23-26.

Sixty-three candidates entered for the examination, of whom 42 passed, viz.: 6 in the A Division and 37 in the B Division, leaving 17 who failed to satisfy the examiners and three who did not present themselves. The examination was partly written, partly practical, and partly vivâ voce.

The decision to make a test of craftsmanship an essential part of the examination is justified by the fact that whereas no candidate who passed the practical test failed in the written examination, several of those who did well in the latter failed in the former.

The practical examination was carried out at five centres—Wisley (R.H.S. Gardens), Edinburgh (Dalkeith Garden), Cardiff (Duffryn Garden), Manchester (Worsley Garden), and Peterborough (Orton Longueville Garden)—where each candidate was required to perform a full day's practical work in the presence of the examiners.

The Society is under a great debt of gratitude to the Duke of Buccleuch, K.G., K.T., the Marquis of Huntly, P.C., the Earl of Ellesmere, and Reginald Cory, Esq., for kindly lending their gardens for the examination.

Of the candidates those who presented themselves at Edinburgh showed generally the best craftsmanship.

The proportion of young to mature gardeners who entered for the examination was comparatively small. There is good reason to believe, however, that their numbers will increase greatly in the immediate future.

Frederick Keeble, F.R.S., Director of the R.H.S. Gardens, Wisley.
W. Wilks, M.A., V.M.H., Secretary.

PASS LIST.

Division A.

Simmonds, A., 110, London Road, St. Albans.
Cope, Gertrude, Manor House Gardens, Northfield, Birmingham.
Titchmarsh, C. C., R.H.S. Gardens, Wisley.
Perry, Bertram P., Holmes Farm, Kilmarnock, Ayr.
Gleed, C. J., Rosemead, Winchester Road, Basingstoke.
Ascroft, R. W., Broxton House, Chilbolton, Hants.

Division B.

Kent, W. G., 22, Orchard Road, Kingston-on-Thames.
Goude, H., 6, Elvin Road, East Dereham.
Abbis, H. W., The Pleasaunce, Overstrand.
Ekins, Emily H., Studley College.
Jones, Harry L., Clerk Hill, Whalley, near Blackburn.
Woolley, R. V. G., Far Croft, Lapworth, Warwickshire.
Verrall, Florence M., The Pightle, Letheringsett, Holt.
Ames, Joseph, The Gardens, Earnock House, Hamilton, N.B.
Green, J. J., Higher King Street, Hurst, Ashton-under-Lyne.
McIver, D. G., 8, Silver Street, Enfield
Chislett, W., Oakleigh, Bishopsworth, near Bristol.
Esplin, J. W., The Murrel, Aberdour, Fife.
Manning, D., 21, Kitchener Avenue, Gloucester.
Johns, W. H., 10, Glendower Street, Cregagh Road, Belfast.
Grinham, F. B., 20, Waterloo Place, Kew.
White, W. C., 51, Fredericks Road, Beccles.
Costin, F. W., Clemsford, Shinfield, Reading.
Crisp, W. C., The Lodge, Babington, Kilmersdon, Bath.
Divers, J., 71, Selwyn Avenue, Richmond.
Richardson, T., 6, Perth Street, Edinburgh.
Chapelow, H. C., Ivy House, Wye, Kent.
Stuart, G., 13, George Square, Edinburgh.
Prentice, H., Hartpury House, Maisemore, Glos.
Foster, H. L., 4, Bower Lane, Maidstone.
Melles, A. B., Lime Tree Cottage, Kew Green.
Wright, C., 13, George Square, Edinburgh.
Griffiths, F. A., Veitch Cottage, Feltham.
Giblett, H. J., Hurstbourne Park, Whitchurch, Hants.
Good, W., 2, Elmbank Drive, Kilmarnock, Ayr.
Meeke, B. D., 3, York Road, Wisbech.
Fallow, G. C., 6, Perth Street, Edinburgh.
Anderson, D., 281, Dalkeith Road, Edinburgh.
Cornelius-Wheeler, Elizabeth, Elmwood, Cosham.
MacIntosh, C. T., Quarter House, Denny, N.B.
Stewart, W., The Gardens, Industrial School, Desford.
Harris, J., College Garden, Liberton, N.B.
Coombes, J., Research Station, Long Ashton, Bristol.

Jas. Hudson, V.M.H.
F. J. Chittenden, F.L.S.
W. Crump, V.M.H.
F. G. Drew.
W. Hales.
R. J. Tabor
Examiners.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Grass in the Rockery (see pp. 435, 457).—I quite agree with the remarks of Mr. N. Gardner (p. 457) that to cultivate grass with Gentiana verna is entirely wrong, and it is very misleading when employed in exhibition groups. It has a charming effect when used on rockeries at exhibitions, but to plant grass in the rock garden proper would soon result in a patch of weeds and no Gentian. But I do not agree as to using Thymus Serpyllum, for this I consider as bad as grass. In a compost suitable for G. verna T. Serpyllum would grow rampantly. I have tried G. verna in several positions and various composts. A batch of plants was set in a mixture of peat and granite chippings at the rate of 1 in 5 of chips in half shade. The plants flowered fairly well and made moderate growth; some out of the same batch were planted in clay loam with a little lime-rubble added, but the plants made no headway. Another batch was planted in sandy loam in full sun, and the remainder in the same compost in a half-shaded situation. Those put in full sun made the best plants, but after the second season they gradually died. We have two large clumps of this Gentian and the largest carried nearly 200 flowers this season. The plants were raised from own-saved seed, which was sown immediately it was ripe. The next spring they were pricked out in a mixture of loam and a little lime-rubble, care being taken to preserve the tap-roots; the majority of the seedling flowered the next season. After flowering they were turned out of the pans without being disturbed at the root and planted in full sun in a moderately dry position. They are now growing well, this being their third season planted out. They are watered in dry weather and appear to be quite at home without any other material employed. I do not think the position is such an essential factor as having plants with undisturbed roots. If one could purchase plants well established in pots, there would not be so many failures with Gentiana verna. *T. Whitham, Hindhead.*

Peaches and Nectarines in the Open.—Wall trees of Peaches and Nectarines in this neighbourhood (Ealing) are carrying remarkably heavy crops of fruit this season, owing, doubtless, in great measure, to the fine weather in September and October last year, which thoroughly ripened the wood. The fruits are developing well, and should the present favourable conditions continue, they will be of fine colour and good flavour. In a good season the fruits from outside trees are always better in taste and appearance than those grown under glass, but weather conditions are so seldom ideal in this country that it is very rare to find an abundance of fruit, especially on young trees in open quarters. *G. W. Cannon, Osterley Park Nurseries, Ealing.*

Delphinium Emiliae.—In your "Answers to Correspondents" (p. 460) the opinion is hazarded that Delphinium Emiliae is not in cultivation in this country. It found a home here some years ago, and, having been distributed to friends, ought not, I think, to be so rare as might be supposed. The plant is seemingly a sky-blue flowered form of D. decorum; but, however that may be, when well grown each is as lovely as the other, and no more beautiful miniature species exists in gardens. Like many Californian plants, D. Emiliae begins the business of life betimes, and does not appreciate a Whitsun frost such as many gardens had to bear with last month; for that reason the roots are best kept out of the ground till April. When at rest they are hard, twiggy little things, dry and apparently lifeless, and not in the least like the fleshy roots of D. nudicaule. D. Emiliae looks for all the world like the western counterpart of D. chinense. *A. Grove, Kentons, Henley-on-Thames.*

Severing of Ivy Stems.—I thank the several correspondents who have kindly replied to my note on the severing of Ivy stems, from which I gather it is done in some cases successfully. I well remember some fifteen or sixteen years ago, at an old rectory in Hampshire, the incumbent was persuaded by a gardener whom I knew personally that it would be perfectly safe for him to sever the stem of a fine Ivy that was covering the western side of the rectory. He did so, and grubbed up the roots. But, alas! before April was out it was evident that the Ivy was dying, and it did die, much to the regret of the owner. *H. G. B., Biddesden.*

National Diploma of Horticulture: Preliminary Examination.—Several writers in the gardening Press have deprecated the value of the National Diploma of Horticulture to the practical gardener, the result of which has been to produce an antagonistic feeling against the examinations. Personally, I felt rather sceptical with regard to the practical test and had some misgivings as to the examiners themselves; but I should like to record my impressions for the benefit of those gardeners—and there are many—who were deterred from entering by the fear that the theoretical would out-balance the practical side of the tests. As to the examiners, it was evident that very great care had been expended in their choice, and in addition their kindly, sympathetic manner was calculated to put the most nervous candidate immediately at his ease. As the tests proceeded one felt assured that there was no fear of a practical man being floored or, what was more important still, that any but a practical man would be able to "scrape through." My own feelings (shared by the majority of the candidates at this centre) were that the questions were lucid, and embodied points which every gardener worthy the name should have at his finger-ends. We felt that where we had failed to answer a question correctly it was due to a lack of knowledge of things which we ought to know, and we came away after a very pleasant day mentally resolving to add to our store of knowledge at the earliest opportunity, and to do better next time. To those amongst us fortunate enough to pass, the examination will be an encouragement to perfect our professional knowledge in preparation for the final test, and to those of us who are not so fortunate it will have been of the greatest value in stimulating us to seek to do better, and altogether it will do far more than any number of agitations and strikes to uplift the profession as a whole and weed out the "wasters." In closing, I should like to express the hearty thanks of my fellow candidates and myself to the judges for the extremely kind, sympathetic and painstaking manner in which the examination was conducted, and to recommend every gardener who has the welfare of the profession at heart to prepare to enter next season. *A Candidate.*

Young Gardeners (see p. 8).—If Sir Harry Veitch has cause to regret the lack of interest in their work on the part of young gardeners of the present day he has not far to look for the reason. Men of the present generation are wiser than those of the past, and have the sense to think for themselves before they choose their occupation. The main question considered is the financial return for their labour and abilities. Is it reasonable to suppose a man will choose an occupation where the prospects are so poor that he can only earn enough to keep body and soul together? A young man with any ambition starting life's journey considers what future prospects there are in store, and without a doubt comes to the conclusion that 20s. to 25s. per week under present conditions for a strenuous life of toil, both bodily and mentally, is not worth the candle, and he either looks for some other occupation or leaves the country on the chance of earning sufficient to be able to keep a wife and family in respectability. So far as the nursery trade is concerned I am sure that the employers would be only too glad to pay their men well, but owing to keen competition and poor prices for their produce they cannot do as they would wish, and until the trade makes a huge combination these unremunerative prices will continue. There is another point in the life of a horticulturist which goes very far to debar a young man from taking up the profession, that is holidays. Gardeners seem to be a class of men who are considered never to be so tired and run down that it is necessary to have a holiday. There are holidays fixed for shop assistants, civil servants, and Government employees generally. Soldiers, sailors, and policemen get theirs, but the poor, overworked gardener has none. After in many cases working from May to September from 6 a.m. to 8 or 9 p.m. at night, and after a life of hard toil, mental worry, etc., what is the result at last? Not a pension at 60 years of age, like so many get, but a pinching and finally an end on charity or the workhouse. *An Old Stager.*

Wasps.—Owing to the enormous amount of damage done by queen wasps in this neighbourhood to fruit and other crops the committee of the Haywards Heath Horticultural Society offered 4d. per dozen for all queen wasps captured within a radius of three miles of the church, and brought in by June 14. The result was 6,768 queens, besides upwards of 30 dozens brought in after the specified date. *H. Lazell, Beech Hurst Gardens, Haywards Heath.*

Davenham and the Gardeners' Royal Benevolent Institution.— The beautiful grounds of Davenham, the residence of Mr. C. W. Dyson Perrins, were open to inspection by the public on the 25th ult., in aid of the funds of the Worcester Auxiliary of the Gardeners' Royal Benevolent Institution. The weather was perfect, and between 500 and 600 people availed themselves of the opportunity of inspecting one of the beauty spots of Worcestershire. The view from the terraces of the Severn Valley was magnificent, but the chief attraction was the Rose garden, in which there were thousands of choice blooms. Anchusas, Delphiniums, Campanulas, Sweet Peas, Antirrhinums in large masses, and other summer flowers were also very attractive. The glasshouses were full of flowers, such as Calceolaria Clibranii, Carnations, Streptocarpus, Gloxinias, Schizanthus and Clarkia, with Palms and Ferns. In the fruit houses were Grapes, Peaches, Nectarines, Figs, Melons, Apples, Pears and Plums growing in pots. The gardener, Mr. C. A. Bayford, and his staff are to be congratulated on the good work which was seen in every department. *A Visitor.*

Metrosideros lucida.—In the issue for June 27, p. 450, under the illustration of M. lucida, it was stated that it is the first time this plant has flowered in this country. Probably this meant out-of-doors, because in the Temperate House at Kew it has flowered regularly for several years past, and although it commenced to bloom early in May there are still a few of the brilliant scarlet flowers left. This plant has also flowered with Mr. Reuthe at Keston, and at Tresco Mr. Dorrien Smith has it growing in the open air, along with the better-known M. robusta, which also flowers freely every year in his delightful garden. Invariably the first plant New Zealanders ask for when visiting Kew is the "Rata," as it is under this name M. lucida is commonly known in New Zealand. *W. T.*

The Lesser Narcissus Fly.—I think Mr. Shea is a little unreasonable. I do not see how it would be possible to produce affirmative evidence to prove a negative, that is, to prove that the Eumerus does *not* attack healthy bulbs. The negative results of the experiment with flies of the second brood recorded in the *Journal* of the Board of Agriculture seems to be the only sort of proof we can expect. And if the same negative result is obtained with flies of the first brood (as I expect will be the case if care is taken to assure the bulbs being sound and healthy throughout the experiment), though it might still be objected that it does not amount to absolute proof that the Eumerus never attacks healthy bulbs under any circumstances, it would, I think, satisfy all practical growers, and we should then concentrate our attention on the eradication of the disease which is, I fear, at present being masked by the subsequent presence of the Eumerus larvae. I have received very contradictory reports on the diseased bulbs I have from time to time submitted, and this seems to point to something not yet fully recognised. But this disease, whether it is Fusarium, or, as I suspect, something else as yet undetermined of a similar nature to the fungoid-bacterial disease of Irises, is evidently very infectious, and exceedingly dangerous and destructive, and, from all I hear, is spreading rapidly. If this should prove to be so, then the attributing to the Eumerus what is really due to this disease, and so delay its recognition and determination, are likely to prove disastrous. There is on the other hand, abundant positive evidence that the Eumerus does attack, or is found in, diseased bulbs, and does feed on decaying matter, and this is now generally admitted even by those who do not think that it always does so. The onus of proof then certainly lies on those who maintain that the Eumerus attacks healthy bulbs, and not on those who doubt or question it. I submit that as yet no such proof has been produced. With regard to the article in the *Journal* of the Board of Agriculture I have already pointed out that general statements, however authoritative, cannot be regarded as proof. Since then Mr. Chittenden's letter has appeared in your issue of June 20 (p. 435), and the report of the R.H.S. Committee of June 16 on the bulb from Mr. Backhouse (July 4, p. 22). In consideration of Mr. Chittenden's high reputation for accurate and painstaking observation, his statements certainly carry very great weight, and I have some diffidence in expressing my doubt regarding the cases he mentions. But I think the experience I have to record will show that there may be some doubt. Since 1912 I have examined several hundred bulbs containing Eumerus larvae, and among them I found a few, less, I think, than 5 per cent., which were as Mr. Chittenden describes, that is, to ordinary naked-eye observation they showed no other damage than could be accounted for by the larvae feeding in the bulb. In the hopes of saving such bulbs when the larvae had not penetrated very far I scraped out the larvae and cleaned away all the visible brown and decayed tissue, and kept them separate and under repeated observation. Most of these eventually went brown and rotten before planting time, in exactly the same way as other slightly diseased bulbs which I had kept, and which had had no larvae in them. Some were replanted, and as far as the J. (1910) seedlings, which had suffered most severely, are concerned, all disappeared. I cannot say absolutely in all cases without going through all the scattered records of all my seedlings, but so far as my recollection goes no single bulb in which Eumerus larvae only have been found has ever survived. On the other hand, bulbs that have had Merodon grubs in them, even when considerably excavated, when so treated and replanted, almost invariably recover, or make healthy offsets. Mr. Chittenden's statement that the decay of the bulb following the attack of the Eumerus is of the same nature as that following the attack of the Onion maggot, suggests a possible explanation of this invariably fatal ending to such attack. And if I may suggest another, it is that the flies may perhaps disseminate the disease, as they fly from one plant to another in depositing their eggs. If this should be so it would very much complicate the problem. In view of these two possibilities it is no doubt well still to keep an open mind, and therefore in spite of thinking that the case for healthy bulbs being attacked by the Eumerus is an increasingly weak one I join with Mr. Chittenden in advising that all doubtful bulbs should be at once taken up and examined, and all containing larvae should be destroyed. *A. J. Bliss.*

——Mr. Geo. St. Ox's attempt (p. 9) to rescue his friend, Mr. A. J. Bliss, from an untenable position would have been left unnoticed by me but for the fact that your correspondent imputes misquotation on my part of the *Journal* of the Board of Agriculture. And this is how Mr. Geo. St. Ox "works" it: by lifting the word "supposed" from the sentence in which it occurs, and seeking to make it appear that it applies to another sentence, namely that which I quoted from the *Journal*. And the two sentences deal with different points, and are separated by a full stop. The word "supposed" occurs only once on p. 140 of the *Journal*, and then in a sentence which deals wholly and solely with the question of the part of the Narcissus in which the Eumerus fly is "supposed"— and that is here the correct term, for at present the matter lacks definite proof—to lay its eggs. And then Mr. Geo. St. Ox calmly carries the word to a sentence dealing with quite a different matter, namely, the dominant point that the larvae from eggs, wherever laid, do, when hatched, "burrow into the necks of the bulbs," with results which, as the *Journal* points out, would make the Eumerus "likely to prove as serious a pest even as Merodon." If they will do this it is obviously immaterial where the eggs may have been laid. So that there may be no mistake I quote *verbatim* the two sentences from p. 140 of the *Journal* of the Board of Agriculture:—"The flies appear in May and June, and are supposed to lay eggs near the base of the Narcissus leaves. The eggs hatch and the larvae burrow into the necks of the bulbs." The essential point which Mr. Geo. St. Ox seeks to obscure is this—Do the larvae, wherever the eggs may be laid, attack the healthy bulb? And as to this there can now remain no doubt whatever, however little Mr. Geo. St. Ox and Mr. A. J. Bliss may like it. For how stands the matter at the present time? I have clearly stated my views founded on my own experience—not surmise—and I cannot do better than quote from Mr. Geo. St. Ox's own letter to show what the Board of Agriculture thinks about it. He writes (p. 9) that "An article confirmatory of his [*i.e.*, my] views came out in the May number of the *Journal* of the Board of Agriculture." And, following that, the letter of Mr. F. J. Chittenden (p. 435)—prudently ignored by Mr. Geo. St. Ox—which states that "at least at times the larvae attack healthy bulbs." This is the whole point, and is all that I have contended for, and sufficient justification, surely, for my note of warning that precautionary measures were required. And the whole effort of Messrs. Bliss and St. Ox has been to seek to put growers off their guard and to deter them from taking these precautions. Questionably useful work this. I do not think that it is necessary for me to defend the Board of Agriculture and its *Journal*, or to enlighten the mind of Mr. Geo. St. Ox as to the propriety of the "14 different interjections" of the *Journal* which have so troubled him, and are supposed to have led me into error. But into what error? It seems to me that Mr. Geo. St. Ox has himself been led into the serious error of showing a too ill-concealed animus against the *Journal* and its expert—who is obviously not Mr. Geo. St. Ox. He prefers the statements of his friend Mr. Bliss on this subject to those of either myself or the *Journal* of the Board of Agriculture. But I had perceived no "statements" by Mr. Bliss, only mere surmises upon an idea—and here Mr. Geo. St. Ox unkindly lets the "cat out of the bag"—which was not even his own. I suggested that in my last note. And now I will conclude with a question which, candidly, I should not have asked but for the note of personality which Mr. Geo. St. Ox imports into his last letter. It is this. What is Mr. Geo. St. Ox's competence to dogmatise upon the subject at all? I remember his name as the writer of an article in *The Garden* of September 13, 1913, upon what he evidently thought to be the Merodon. *Inter alia* of funny things he told us that he had killed as many as 62 flies of the Merodon in three hours, and we know how difficult it is at times to catch even a single fly with any sort of net. And the flies were evidently buzzing about very much at large, for, so Mr. Geo. St. Ox writes:—"I found the fly this year in lanes feeding on Wild Hemlock; in the neighbourhood of houses; in railway stations; in fields; on the grass, etc." The sky must have been quite dark with them it would almost seem. And I remember the wonder came into my mind as I read that article whether its writer really knew the Merodon from the bluebottle; and, if he did, could there be a single Narcissus bulb remaining in his garden or its neighbourhood? And I am wondering on this point still. Of course it is not wrong to kill bluebottles, so I am not finding fault with Mr. Geo. St. Ox for his extraordinary exertions in those three hours. Rather, he has my sympathy, if it is of any use to him. *Charles E. Shea.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Cymbidium.—Certain Cymbidiums, including C. Tracyanum and its hybrids, produce at this season a number of roots that grow in an upright manner through the surface of the potting compost. As soon as such roots are observed, any necessary repotting should be done. Do not disturb the roots of large specimens, unless the plants require increased room, or the compost is in an unsatisfactory condition, but when disturbance is imperative, then use a durable compost. Two parts of good turfy loam, one of fibrous peat or Osmunda fibre, and plenty of broken charcoal, well mixed together, will provide a suitable mixture. The pots should be large enough for the plants to occupy them for two seasons; in these circumstances, it will be seen that efficient drainage is of the utmost importance, especially as the plants require a liberal supply of root moisture at all times of the year. C. Lowianum and other species from which the flowers have been removed recently are commencing to grow afresh, and as soon as the new growth is a few inches in length, the work of re-potting or top-dressing may be given attention. The plants of this species and allied genera, together with their hybrids, should be overhauled annually, all dead and decaying matter at the base cleared away, and a close observation made for the presence of insect pests, which frequently secrete themselves at the base of dead leaf-bracts. By destroying the pests before new growth commences much trouble will be saved later; brown and white scale are the worst pests, but plants that have been in contact with others that have been attacked by mealy-bug may also be infested with this pest. Recently-potted plants should be shaded carefully until the roots are re established. Syringe the plants overhead two or three times a day during hot, dry weather, and keep the atmosphere well charged with moisture. C. Tracyanum flowers satisfactorily when grown with Odontoglossums throughout the year. C. Lowianum, its hybrids, and most of the allied species are best grown in warm conditions during the winter, but from March until October they do very well in a cool house. C. devonianum, with its tufted growth of broad leaves, is rarely seen in cultivation. The plant flowers late in spring and early summer, and should only be re-potted when a shift is absolutely necessary, as the roots usually take a considerable time to become re-established. The compost should be of a lighter and more open nature than that recommended for the more robust kinds. C. tigrinum is best grown in shallow pans or baskets that may be suspended from the roof-rafters, being of dwarf habit and with drooping racemes. The warm intermediate house suits this species best. The work of potting should be attended to during the next few weeks as soon as the roots become active.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Montbretia.—This highly decorative bulbous plant thrives in any open soil, provided it has not been manured recently. The flowers are of great value for cutting, and last fresh for a long time in water. Clumps that are crowded should be marked with a view to lifting them in the autumn, when the best corms should be selected for planting in a fresh site. It is advisable to re-plant a portion of the stock of these plants every year.

The Rose Garden.—June is a most important month in the Rose garden, and the grower needs to be very watchful of his trees, always remembering in the case of pests and diseases that "prevention is better than cure." The Rose has numerous enemies—aphis, mildew, sawflies, Rose slugworm, caterpillars, beetles and leaf miners, and numerous others—all of which are ever ready to attack the plants. The most troublesome pest is aphis, which may be kept in check by spraying with quassia extract, 1 gallon of extract and 6 lbs of soft soap to make 100 gallons; or 6 lbs. soft soap, 2 ozs. of pure nicotine to 50 gallons soft water. Spray the trees two or three times on alternate days. Garden Roses are the most useful of all, for not only are they effective and perpetual bloomers in large beds, one variety in one bed, but they are equally valuable for furnishing cut blooms. The following are sterling varieties which have proved a success with us:—Ecarlate, C. J. Graham, Papa Gontier, General McArthur, Warrior, G. Nabonnand, Avoca, Marquise de Sinety, Richmond, Mrs. E. G. Hill, Mme. Mélanie Soupert, Le Progrès, Lady Hillingdon, Corallina, Rhea Reid, Frau Karl Druschki, Caroline Testout, Pharisaer, and that beautiful late bloomer, Beauté de Lyon. For cutting in the bud stage we have Irish Elegance and Fireflame. In the Polyantha section we have Perle d'Or, Anna Marie de Montravel, Perle des Rouges, Orleans, and others, all of which are suitable for cutting.

Tulips.—Bulbs of the Darwin and May-flowering varieties that were removed from the beds to make room for the summer-bedding plants are now ripened and should be lifted from the ground after their temporary replanting, and dried and assorted. The firmest and largest bulbs should be placed in drawers or paper bags and duly labelled; many of these will flower fairly well next year if managed as directed. I have come to the conclusion that the late or May-flowering Tulips are the only Tulips worth growing in quantities. Those of the early single Dutch section can never be depended upon to flower well the second year, and as the bulbs may be purchased cheaply there is very little inducement to attempt to flower them the second year, whether in grass or borders. The double varieties are best for planting in grass, and much more lasting.

Rock Plants.—The present is a good time to propagate many subjects in the rockery from cuttings formed of half-ripened shoots. Prepare a cold frame by placing a layer 6 inches deep of material for drainage, and on this spread another 6 inches of sandy peat and fine leaf-mould, with 3 inches of pure sand on the top. Insert the cuttings as they are available, water them well, but do not shade the glass or ventilate the frames. Gently damp them overhead by means of a syringe three or four times daily, according to the condition of the atmosphere. The more sunshine and humidity the quicker will the cuttings root.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Cucumbers.—Attend to the training and stopping of the growths at least twice each week, and endeavour to furnish all the space in the house or frame with healthy growth. Admit air early in the day, but not too freely at first, remembering always to keep the atmosphere moist by damping all available surfaces frequently.

Strawberries.—The runners intended for forcing next season should be secured as soon as possible. Select only the very strongest plants and layer them in 3-inch pots filled with loamy compost, made very firm. As each runner is placed in position, and secured to the soil by a small wooden peg, afford the soil a copious watering, but guard against an excess of moisture afterwards, until the pots are filled with roots. An occasional damping overhead with clear water will benefit the plants and favour the development of roots. All lateral runners should be removed as well as any others on the parent plant that are not required. The compost for layers may consist of four barrowfuls of good fibrous loam and one barrowful manure from an old hot-bed, or spent Mushroom-bed, with a little soot and bone meal, turning the mixture three or four times, so that the ingredients may be well mixed.

Tomatos.—The houses in which Tomatos are grown should be ventilated freely, admitting air by the top ventilators. Top-dress the roots from time to time, and feed them on occasions with liquid manure, as there is little danger of the foliage becoming gross when the roots are restricted in pots. Remove the laterals, but do not prune away any of the foliage, unless it is absolutely necessary in order to allow the light and air to reach the fruit. As plants in succession houses come into bearing, ventilate them freely to favour a sturdy growth. Keep the atmosphere somewhat dry, but guard against drought at the roots. Never syringe Tomatos overhead, but damp the paths and other bare spaces to promote atmospheric moisture.

Figs.—Trees on which the second crop is maturing require an abundance of air, both by night and day, for the atmosphere should be buoyant, and not surcharged with moisture. At the same time a high temperature should be afforded, using fire heat if necessary; the growths will then become firm and well ripened. After the second crop has been gathered do not allow the trees to fruit again, but withhold root and atmospheric moisture, and allow the trees to enjoy a rest.

Melons.—Where the plants are clean and healthy, and the first crop of fruit has been cut, reduce and regulate the growths, and afford a thorough watering with liquid manure. Successive cropping gives quick returns, and under proper cultivation the plants will produce a second crop equal to the first. Ventilate freely the pits and frames in which fruit is ripening, and expose every leaf to the light. If ripe fruits are required in October, set fresh plants at the end of this month in pits or frames heated with hot water. It is not to be expected that these later fruits will be so fine or so highly-flavoured as those ripened by the sun. Fill the bed of the pit with suitable materials to furnish a lasting but mild bottom heat, and plunge the pots to their rims, or set the plants on mounds or ridges of earth. The best varieties for late cropping are those which are also best suited for early fruiting, such as Eminence, Blenheim Orange, and Earl's Favourite.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Apples.—There is every promise of a large crop of Apples in this locality. Trees that are bearing heavily should be thinned before the fruits are far advanced, and a start should be made with the large, culinary varieties. Overcropping would not only cause a loss in the quality of the present season's crop, but would cripple the tree for the next two or three years. The necessity of thinning the early varieties was dealt with in a previous calendar; mid-season and late varieties should now receive attention. Certain varieties in favourable seasons invariably set large crops, for instance Lane's Prince Albert, which is one of the most prolific of late Apples. Indeed so freely does it bear that young trees are often greatly injured thereby, if not irretrievably ruined, unless thinning is practised. I have seen instances where young standard trees have been overcropped, and afterwards they made scarcely any growth, but presented a starved and stunted condition. The treatment to bring the trees into a proper condition again consists in cutting the head hard back, thereby inducing new growth to develop. At the same time the roots should be stimulated by feeding and watering, thus assisting the tree to recover.

Apples for exhibition.—When fruit is required for exhibition the crop should be thinned severely, but it is well not to remove all the surplus fruits at one operation, but rather to go over the trees a second time after an interval of a week or two. The trees must also be given assistance in the form of manure and regular waterings during dry weather. Culinary varieties suitable for exhibition include Emperor Alexander, Peasgood's Nonesuch, Gascoyne's Scarlet Seedling, Bismarck, Gloria Mundi, Norfolk Beauty, Rev. W. Wilks, Mère de Menage, Bramley's Seedling, Hambling's Seedling, Warner's King, Golden Noble, Lane's Prince Albert, Newton Wonder, The Queen, Lord Derby and Jubilee.

Dessert Apples do not usually require so much thinning as culinary sorts, but for the production of the finest dessert fruits some thinning must be practised. The same danger from overcropping applies as in the case of the cooking varieties. A selection of the best dessert Apples for show purposes includes James Grieve, Worcester Pearmain, American Mother, Alington Pippin, King of the Pippins, Cox's Orange Pippin, King of Tompkins County, Christmas Pearmain, Wealthy, Ribston Pippin, Charles Ross, Rival, Lord Hindlip, Egremont Russet, King Harry, Reinette de Canada, and Scarlet Nonpareil.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Violets for Winter Flowering.—The ground between the rows should be kept free from weeds and stirred with the hoe. Runners are developing, and these should be removed close to the crown of the parent plants. If the weather continues dry a mulching of manure from a spent Mushroom-bed will help to keep the grounds moist. Dust the plants with soot to keep red spider in check, and syringe them in the afternoon when the weather is fine. Double varieties are more subject to infestations of red spider than the single sorts, and the pest must be kept in check by a frequent use of the syringe, applying the spray with force on the undersides of the foliage.

Salvia.—The plants are ready for potting finally, using 8 or 10-inch pots for the largest specimens. Pots 6 inches in diameter are suitable for the later-rooted cuttings. The compost may be such as is used for Chrysanthemums, and it should be made firm. Stand the plants in a sheltered, sunny place out-of-doors, pay careful attention to watering and syringing, and feed them with manure and soot water as soon as the pots become filled with roots. Stop the shoots as soon as the roots are re-established, and again when the secondary growths are 3 inches long.

Francoa.—F. ramosa (white), F. appendiculata (red), and F. sonchifolia (pink), are worthy subjects for greenhouse culture. Plants of the earliest batch are throwing up their flower spikes, and should be supported to stakes, and the roots afforded stimulants. Later batches may be grown in a cold frame with a north aspect. Repot young stock in a compost consisting of half loam, half leaf-mould, dry, broken cow-manure and sand. Young plants should receive the protection of lights for a week or two.

Begonia Gloire de Lorraine.—The strongest plants need shifting into 6 and 7-inch pots, in which they will flower. Use compost of an open texture, such as is provided by three-parts turfy loam (removing the very fine soil), the remainder equal parts fine dried cow-manure and half-decayed oak leaves rubbed through a ½-inch sieve, adding a little soot and sand. Use plenty of drainage materials, and pot moderately firmly. Stand the plants in a house or pit having a temperature of 65° to 70° at night, and dust the stagings occasionally with soot, also syringe the plants two or three time daily.

Begonia Gloire de Sceaux.—Cuttings of this handsome Begonia may still be inserted, and the plants will make handsome decorative specimens in 6-inch pots. The earlier plants will make large specimens in 8-inch pots. Cuttings root freely in an open compost in thumb pots. Plunge the pots in cocoanut fibre with a bottom heat of 70°. Re-pot the plants as soon as they are ready for shifting, and grow them on as directed for the variety Gloire de Lorraine. Keep the atmosphere moist, and shift the plants into larger receptacles before the roots become potbound. Mite is sometimes troublesome, and fumigating should be practised to keep the pest in check.

Mignonette intended for flowering in autumn should be sown now in 5-inch pots, the compost to consist of three parts loam, one part leaf-mould, a little mortar rubble, and manure from a spent Mushroom-bed. Press the soil in the pots, make the surface smooth, sow a few seeds in each pot, and cover them with fine soil. Cover the pots with mats to assist the seeds to germinate. Thin the seedlings to 5 in each pot, and subject them to cool treatment throughout. Pick off the first flowers to promote a branching habit, and afford the roots stimulants when they fill the pots.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Herbs.—Any kind of herb that has made suitable growth should be cut and the shoots dried. Some consider that herbs are best dried in the sun, whilst others favour drying them in a cool apartment. Sun drying has long usage to recommend it.

Shallots.—The bulbs will now be ready in many districts to harvest. A good method of ripening the bulbs is to stretch a piece of small-meshed wire netting clear of the ground and dispose the shallots thinly thereon. In this manner they receive the maximum amount of air, whilst rain passes away as it falls and does them no harm. When sufficiently dried Shallots should be stored in a dry and airy place.

Endive.—Make a sowing of broad-leaved Batavian Endive for transplanting into frames for use in mid-winter. When large enough to transplant set the seedlings not closer than 15 inches apart in light soil.

Cabbages.—In the north seeds of Cabbages for spring cutting should be sown forthwith, the old custom of sowing in beds still obtaining in many gardens. It has the great advantage when carefully performed of securing to the seedlings more space than is usual for those raised in lines, though rows drawn wide and the seeds sparingly scattered therein are equally good. The soil, if recently dug, should be firmed somewhat in order to produce a hard growth from the initial stage. Firm soil, moreover, contributes to the formation of plenty of fibrous roots.

Peas.—It is customary to sow an early variety on or about this date for late picking, though, with the excellent late varieties we now possess there is no great necessity for continuing the practice. Still, if there is space at command, and a dwarf-growing variety is chosen, such as Chelsea Gem or other of this type, it is only a question of putting in the seeds, and by-and-by drawing some soil to the stems to keep them upright, and no doubt the plants are less liable to mildew than the usual run of late Peas.

Winter Greens.—Before these become too large the soil, if of a close texture, should be loosened with a fork or other suitable implement, and then enough drawn to each side of the plants to render them steady. We earth Brussels Sprouts with the spade, the soil never being turned over save on this occasion, and the plants exhibit a marked advance of growth subsequently. London Coleworts should be planted from time to time wherever there is space available, the heads being of much value on account of their tender quality. Scotch Kale sown in May is ready for transplanting, and will do well in succession to Peas, Potatos, or other early crops, the ground merely needing to be cleaned, if weedy, and levelled. If a first-rate kind is grown a space of 18 inches is sufficient for each plant. A surface-dressing of rotted manure and a good artificial are important aids to growth. It is the general belief that this Kale is quite hardy, which is a mistake, some strains being peculiarly subject to loss from frosts, and on that account a hardy growth such as that induced by a surface dressing is to be preferred to the more tender growth of plants set in manured soil.

French Beans.—A large sowing of French Beans may be made now or soon on the border occupied earlier by Peas, Cauliflowers, and other crops, breaking the ground thoroughly, and adding some well-decayed manure. If the soil is dry water it well in the drills. The seeds need not be so close as for the main sowing; if the plants are 1 foot apart it will be a suitable space. Choose a dwarf variety, such as Osborn's Forcing, in preference to a more robust sort, and as soon as the plants are well above the ground draw a little soil to the stems, repeating the operations later.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 14—
Roy Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "The Cooking of Leaf Vegetables.") Saltaire and District Sh. (2 days). Arbori. Ex. at Hawick (4 days). Gloucestershire Rose and Sweet Pea Sh.

WEDNESDAY, JULY 15—
Hort. Club Excursion to Hatfield House and Balls Park. Formby Hort. Soc. Sh. Nottingham Hort. Soc. Sh. (2 days). Llandudno and District Hort. Soc. Sh.

THURSDAY, JULY 16—
Nat. Sweet Pea Soc. Sh. at R.H.S. Hall. Nat. Rose Soc. Sh. in Sydney Gdns., Bath. Birmingham Floral Fête (3 days). Manchester and North of England Orchid Soc. meet.

FRIDAY, JULY 17—
Nat. Carnation and Picotee Soc. Sh., R.H.S. Hall.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 63.2.

ACTUAL TEMPERATURES:—
LONDON, *Wednesday*, July 8: Max. 72°; Min. 55°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, July 9 (10 a.m.); Bar. 29.7; Temp. 78°. Weather—Cloudy to fair.
PROVINCES, *Wednesday*, July 8: Max. 71°, Leamington; Min., 48°. Buxton.

Seeds, Dead or Alive?

In Nature plants have had a hard mistress, but they have accommodated themselves to her demands. This is very clear when we look at the arrangements of different plants with regard to their seeds. Some we find have so planned it that their seeds shall germinate at once on ripening, and if they do not they quickly die; others have so ordered their existence that their seeds shall remain, by one contrivance or another, for long periods in the ground without growth, and so become scattered in time. The gardener has often other ideas upon these subjects. He wishes now to force the reluctant seed into germination, now to hinder and preserve the overhasty one.

An account of some work has recently appeared in the *Proceedings* of the Royal Society, under the title of "The Controlling Influence of Carbon Dioxide in the Maturation, Dormancy and Germination of Seeds" (see *Gardeners' Chronicle*, Vol. L., p. 392) which has suggestive bearings upon these two difficulties—relics of the old régime—which confront the new lords of the plant world. It has been found that by means of comparatively small amounts of carbon dioxide in the atmosphere the germination of wet seeds is completely inhibited. It is as if a sort of narcosis or drugged sleep had been induced, for in the experiments described the full amount of warmth, oxygen and water necessary for germination in the ordinary way was given. You might, indeed, for the moment be convinced that the seeds are dead. Yet they are only in a deep comatose sleep. Remove the carbon dioxide and in a couple of days or so the seeds all begin to germinate.

In some cases the charm proved not so simple. On the removal of the soporific (carbon dioxide) the sleepers did not awake. At first it seemed that here was a sad end to the tale. Thus White Mustard (Brassica alba) seeds were prevented from germinating on wet sand by 20 per cent. CO_2 in the atmosphere, but when the CO_2 was removed they still lay on day after day with never a stir or a sign of sprouting. The conclusion was obvious—they were dead. They were thrown upon the manure heap. Time passed and the sad author, walking in his garden, was struck with amazement: the dead had come to life again. The discarded seed had produced a flourishing crop of young Mustard.

A series of careful experiments following on this observation has shown that in certain cases wet seeds are thrown into a condition of prolonged after-dormancy by the action of CO_2 upon them while in germinating conditions. Two methods were found by which seeds in this condition could be induced to germinate freely at once: either complete re-drying or the removal of the seed-coat.

The interest of these facts is much increased when it is noted that the author was able to repeat his results in the soil by using carbon dioxide produced from rotting organic matter. He remarks with probable significance that dunging and the ploughing in of green crops or the digging of weeds or other organic material would be likely to produce considerable quantities of CO_2 in the soil—quite enough often to inhibit the germination of seeds planted under these conditions. It must occur to anyone interested that this is matter worth systematic investigation, the results of which might be of use to the practical man. In one case 8 per cent. of CO_2 was found in the soil gases several months after half a bushel of green grass had been earthed over to the depth of a foot. In another 10 per cent. CO_2 occurred in air taken from soil that had been dunged some ten days previously.

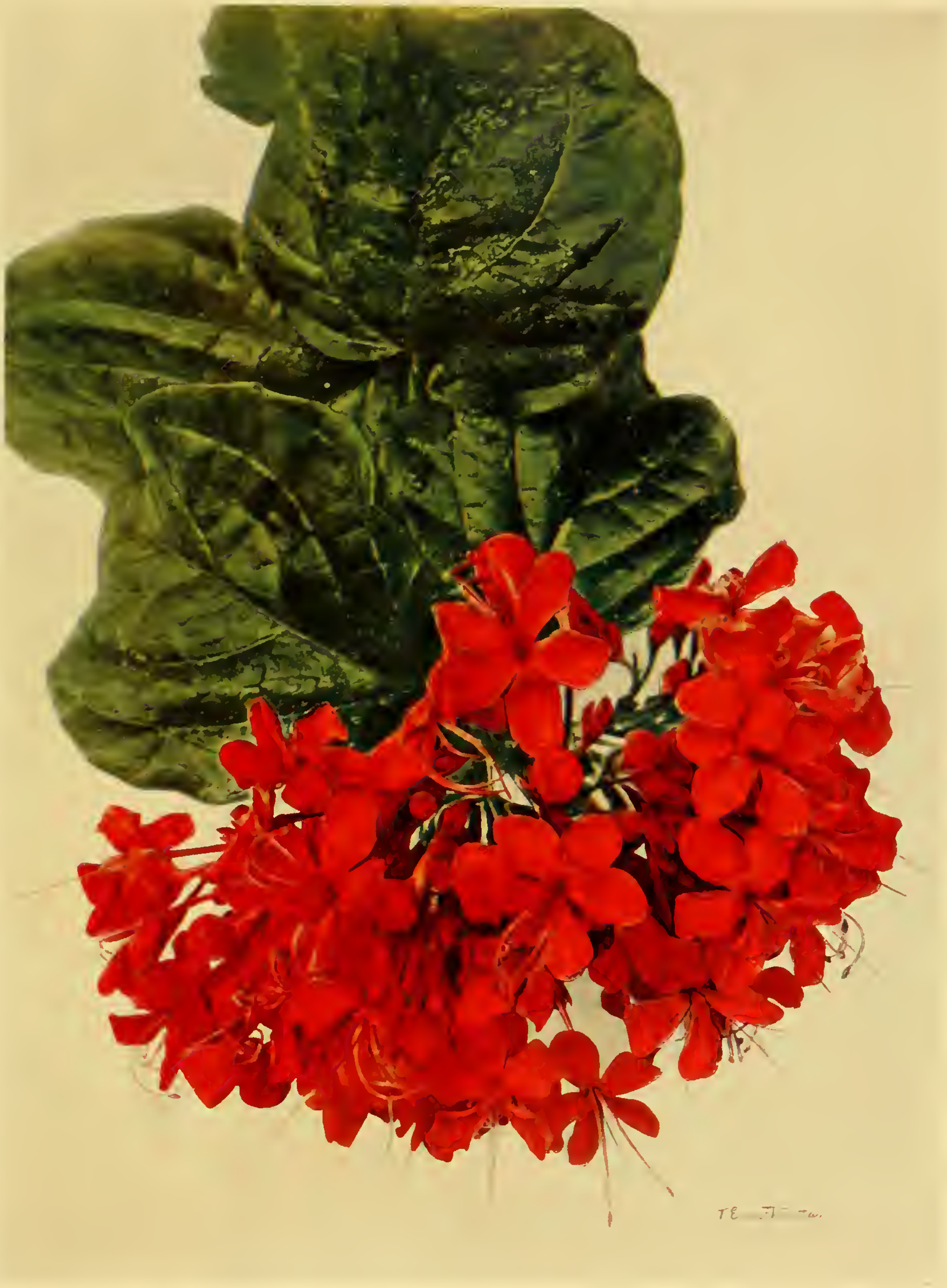
The influences of temperature and oxygen supply upon this inhibition of seed germination by carbon dioxide are important from one point of view. It is striking to find that lower temperatures and decreased amounts of oxygen both intensify this inhibitory action of carbon dioxide upon germinating seeds. Thus at 38° Fahr. 4 per cent. of CO_2 sufficed to stop the germination of Mustard seeds, while at 47° Fahr. 8 per cent. was sufficient. With regard to oxygen, on the other hand, with 5 per cent. at 63° Fahr. 12 per cent. CO_2 inhibited germination, with 10 per cent. oxygen 18 per cent. CO_2. Such figures suggest that CO_2 inhibition of seeds must be a fairly frequent occurrence in the soil in nature.

Our Supplementary Illustration.—Clerodendron splendens has been known to gardeners in this country for the past 70 years, but although one of the finest stove climbers in cultivation, it is comparatively rare in gardens. It was introduced originally from Sierra Leone, but it is fairly common in certain localities over a vast tract of country in Tropical West Africa. It forms a strong, quick-growing climber suitable for either an intermediate house or stove, flowering freely in either structure, but producing the finest trusses of flowers when the heat is not excessive. It thrives in any rich soil, and is suitable for either pot or border culture. In common with other quick-growing plants, it is a gross feeder, and a well-drained soil is essential to its well-being. The flowers are produced in clusters at the ends of the climbing growths, and from the numerous lateral ones, which are produced all along the length of the new growths. The colour of the flowers contrasts finely with the rich olive-green foliage. The plant has no decided resting period, neither has it any well-marked period of flower, for clusters of flowers are produced throughout the whole year, but are most abundant during the months of March, April and May. A fine hybrid between this species and the well-known C. Thomsonae has long been in cultivation at Kew under the name of C. speciosum. The flowers are a rosy-red shade, and are produced in loose, spreading panicles throughout the summer and autumn. Like most of the tropical species of this genus, both C. splendens and its hybrid are readily raised from cuttings of half-ripe wood inserted in sandy soil in a moist case with brisk bottom heat, where they root in a few weeks.

Visit of Horticultural Club to Hatfield House and Balls Park.—On the occasion of this excursion, which was announced last week for Wednesday next, July 15, the members and friends will meet at 9.30 a.m., at the Hotel Windsor, Victoria Street, Westminster, S.W. At 10 o'clock motor-cars will convey the party to Hatfield House, the seat of the Marquess of SALISBURY, G.C.V.O. An inspection will be made of the park and gardens before lunch, which will be taken at the Red Lion Hotel. Immediately after lunch Hatfield House will be visited. Later in the afternoon the party will drive through one of the prettiest parts of Hertfordshire to Balls Park, the seat of Sir GEORGE FAUDEL-PHILLIPS, Bt., G.C.I.E., who has kindly invited the club to inspect the gardens and take tea. The return journey to town will be made by motor-car. Tickets may be obtained from Sir HARRY VEITCH, East Burnham Park, Slough.

Holland House Show.—The following Supplementary Awards were made by the Council at the Summer Show at Holland House:—Silver-gilt Cup to Mr. MAURICE PRICHARD for hardy herbaceous plants; Silver-gilt Banksian Medal to Messrs. BAKERS, for hardy plants; Silver Flora Medals to Messrs. BARR AND SONS for cut flowers, and Messrs. R. H. BATH, for hardy herbaceous plants; Silver Banksian Medal to Messrs. RICH AND Co., for hardy herbaceous plants; Bronze Flora Medal to Messrs. CANNELL, for hardy herbaceous plants. In addition to the exhibitors of Sweet Peas mentioned last week, Messrs. JOHN K. KING AND SONS, Coggeshall, showed a collection of some 50 distinct varieties, occupying about 30 feet space, for which they were awarded a Silver Cup. The leading varieties included Scarlet Emperor, White King, King Alfred, Queen Mary, Prince Edward of Wales, Wedding Bells, Coral Gem, Rosabelle, Decorator, Illuminator, Marks Tey and others. Mr. ANDREW CAMPBELL, Alpine Nursery, Ardross, Leeds, exhibited alpine plants naturally arranged, with rock stones selected from the local river, all beautifully covered with Moss, weathered green, and naturally planted with the choicest alpine plants, for which he was awarded a Flora Medal. The fine collection of Chinese

Supplement to "The Gardeners' Chronicle"



CLERODENDRON SPLENDENS (NAT. ORD. VERBENACEAE)

Stove Climber from Sierra Leone.

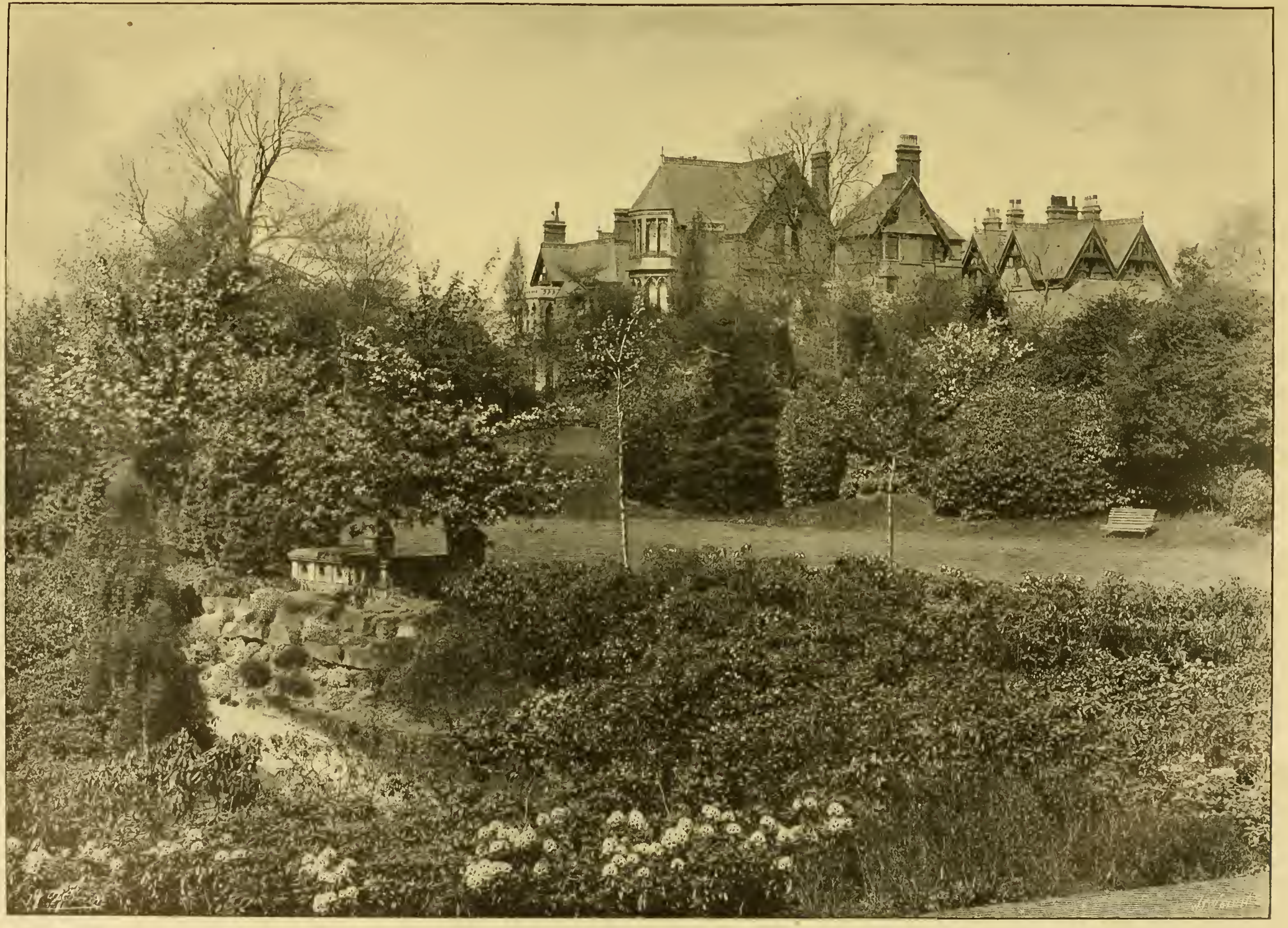


FIG. 16.—HIGHBURY, BIRMINGHAM, THE LATE MR. JOSEPH CHAMBERLAIN'S RESIDENCE, AS SEEN FROM THE SOUTH-EASTERN PORTION OF THE PLEASURE GROUNDS.

(See p. 42.)

trees and shrubs exhibited by the Hon. Vicary Gibbs, was awarded a Silver-gilt Cup, not a Silver-gilt Medal, as stated last week.

The Gardeners' Company.—At the Mansion House on the 1st inst., the Master and Wardens of the Worshipful Company of Gardeners made their annual present of flowers, vegetables, and sweet herbs to the Lord Mayor. This annual gift is made to commemorate a warrant issued by the Recorder, Sir Edward Littleton, in 1632, ordering the apprehension of persons using the trade in contempt of the Company's Charters.

R.H.S. Forced Bulb Show.—The Council of the Royal Horticultural Society will offer (subject to the General Rules of the Society) prizes presented to them by the General Bulb Growers' Society of Haarlem, at the special bulb show on March 9, 10. Six classes are open to amateurs. (a) 18 Hyacinths, distinct, 1st prize, Gold Medal, and £3 3s.; (b) 12 Hyacinths, distinct, 1st prize, Silver-gilt Medal and £2 2s.; (c) 6 Hyacinths, distinct, 1st prize, Silver Medal and £1 1s.; (d) 8 pans containing Hyacinths, 10 roots of one variety in each pan, 1st prize, Gold Medal and £3 3s.; (e) 4 pans containing Hyacinths, 10 roots of one variety in each pan, 1st prize, Silver-gilt Medal and £2 2s.; (f) the finest decorative display of Hyacinths, to be staged on the floor, 1st prize, Gold Medal and £3 3s. The class for trade growers is for the finest decorative display of Hyacinths, to be staged on the floor, special prize, Silver Cup of the General Bulb Growers' Society of Haarlem. Holland; 1st prize, Gold Medal. Full particulars may be obtained from the secretary, Royal Horticultural Society.

Gardeners Royal Benevolent Institution.—The annual meeting of the Berkshire, Reading and District Auxiliary of the Gardeners' Royal Benevolent Institution was held in the Abbey Hall, Reading, on Monday, the 22nd ult. Mr. W. Pope presided. The Hon. Secretary presented the report and balance-sheet, which showed that in 1913 a sum of £110 had been forwarded to the parent institution. This sum, though slightly below the amount sent in 1912, has only been exceeded in three previous years, while the balance of £6 7s. 10d. has been carried forward to 1914. During its comparatively brief existence the auxiliary has sent to the parent society the sum of £1,374 16s. 6d. The Hon. Secretary mentioned that although no application for life membership had been received during the past year, the contents of Mr. Donald's collecting box at Messrs. Sutton's trial grounds (which last year went to a kindred society) balanced the absence of contributions from new life members. Thanks were accorded to the Reading Gardeners' Association for sums of £5 18s., part proceeds of their exhibition, and an annual subscription of £2 2s. Mrs. Rowland Sperling was again elected President. The Hon. Treasurer and Chairman, the Vice-Presidents, and Hon. Secretary were all re-elected.

Visit to Underley Hall.—On the 27th ult. the members of the Burnley and District Horticultural Society paid a visit to Underley Hall, Kirkby Lonsdale, by kind permission of Lord Henry Bentinck. The party was met at the gates and conducted round the grounds by the foremen of the different departments. Those who have ever visited Underley will remember the delightful and natural scenery, but apart from this a specially interesting feature was the Rock Garden, in which Lord Henry Bentinck takes a great interest, and the splendid collection of Perpetual-flowering Carnations was much admired.

National Carnation and Picotee Society.—Readers may be glad to be reminded that the annual show of this Society will be held on Friday, July 17, at the Royal Horticultural Hall, Vincent Square, Westminster. The Hon. Sec. and Treasurer is Mr. C. Henwood, 21, Clifton Road, Maida Vale, W.

The National Sweet Pea Society.—On Thursday, July 16, the day of the annual exhibition of Sweet Peas, the President of the society, Mr. Hugh Dickson, will hold a reception at the Hotel Windsor from 6.45 to 7.30. This reception will be followed by the annual dinner at 7.30. An inspection of the Society's trials at the Burbage Experimental Station, near Hinckley, will take place on Friday, July 17. The party will leave Euston at 8.35 a.m.

Conference on Forestry.—At the Anglo-American Exhibition, Shepherd's Bush, on Thursday, the 16th inst., at 11 a.m., a conference will be held on Forestry. Papers will be read by Sir Wilhelm Schlich, Professor Henry, Mr. R. L. Robinson, Mr. W. B. Greeley (N.S.A. Forest Service), and Mr. A. C. Forbes.

A Substitute for Watercress.—Erysimum praecox L. is recommended by Mr. V. L. Enfer (*Le Jardin*, 1914, p. 123), as a substitute for Watercress. To obtain sappy plants they must be grown in well-worked rich soil. Seed may be sown in April in the open, and the plants must be watered frequently during the summer. The leaves must be cut in a young state, otherwise they become tough.

Rose Lady Waterlow.—Mr. Paul Nabonnand, the raiser of this Rose, writes to the Editor of *Les Amis des Roses*, May-June, 1914, to point out that the Rose Lady Waterlow, offspring of France 89 by Marie Lavalley, resembles the former much more closely than the latter, and that there is therefore no justification for the proposal made in the previous number of the journal to remove it from the sub-group of France 89. Mr. Nabonnand points out that the Rose under discussion owes to Marie Lavalley only its vigorous habit, and—in part—its colour.

Preservation of Pollen.—A note in *Les Amis des Roses* draws attention to the observation of M. Roemer that pollen may be preserved by cold storage and that it keeps best if it be protected from the access of moisture. To those who wish to preserve pollen for hybridisation purposes we would recommend the following procedure. In a small cylindrical glass specimen tube place a few grains of dry calcium chloride; cover with a thick wad of cotton wool. Put the ripe pollen in a small thimble made of flexible cardboard. Cork the tube and keep it in a cool place—if possible in cold storage.

A New Potato Digger.—Under this title the *Queensland Agricultural Journal* (May, 1914) gives an account of the successful working of a digger invented by Mr. Daniels. Unfortunately the note is not accompanied by a description of the machine, which weighs 8 cwts. and is drawn by 2 horses. It is stated that the machine digs a row of 5 chains in 3 minutes and that the Potatos are left lying in the middle of the row, uncut, and that the weeds are buried. The machine is calculated to dig 4 acres a day.

The Persistence of the Late Blight Fungus in the Soil.—Experiments carried out by Mr. F. C. Stewart, and published in Bulletin No. 367 of the New York Agricultural Experiment Station, indicate that contrary to the views expressed by Mr. G. Massee and others, the fungus (Phytophthora infestans) does not remain alive in the soil from year to year. If this be so, the cause of the widespread outbreaks of this disease is still to seek.

R.H.S. Tulip Nomenclature Committee, 1914.—In the autumn of 1913 an invitation was issued to the leading growers to send to Wisley for trial bulbs of their varieties of Tulips, with the names by which they know them. The bulbs were planted at Wisley, and on Monday, April 20, a joint committee of Dutch and English experts met to consider the early varieties; and again on May 6 and 7 to consider the May-flowering varieties. The committee consisted of Mr. E. A. Bowles, M.A. (chairman), Mr. H. E. Krelage (vice-chairman), the Rev. Joseph Jacob, and Messrs. Barr, De Graaff, Hall, Hoog, Leek, Needham, Roes, and Ware. Over 4,000 varieties of Tulips were examined and their nomenclature and synonyms determined. The trials of the May-flowering varieties only will be continued in 1915, and growers are invited to send fresh bulbs—five of each variety—named. Bulbs will not be accepted later than November 1, 1914. Senders are asked to designate roughly their colour and the class to which they belong to facilitate the work of planting. On each occasion the committee sat in conference, and drew up recommendations for a classification. The recommendation will be reconsidered at a Conference to be held at Vincent Square on May 13 and 14, 1915. It is then intended to prepare the final list of varieties and synonyms, and all recommended varieties will be definitely placed in one or other of the sections and subsections of the classification. This final list, with official descriptions, will be printed and published by and at the expense of the R.H.S. in conjunction with the Dutch Bulb Growers Society in Haarlem. To make the descriptions short and clear certain typical varieties will be selected, described, figured, and named, so that others can be described by reference to them. Thus systematised, the colour, shape, base, and the relative length and breadth of the inner segments will be recorded. The Council has adopted the recommendation of the committee to hold a show of Darwin and Cottage Tulips on May 14, 1915, for cut blooms only, in vases, for the purpose of enabling the Nomenclature Committee to decide on the synonyms of the varieties sent, for which the following arrangements have been made:—(1) R.H.S. Medals will be given to collections, and Awards made to species and varieties at the discretion of the Council. (2) On May 12 the hall will be available for staging from mid-day. May 13, staging must be completed by 9 a.m., when the committee will commence this work. The committee *only* will be allowed in the hall on the 13th. On May 14 at 9 a.m. the committee will continue its work; at 11 a.m. the two members of each exhibiting firm and private exhibitors will be admitted, but not earlier; at 1 p.m. R.H.S. Fellows will be admitted; at 2 p.m. the public will be admitted. (3) A full collection of standard varieties of May-flowering varieties will be brought from Holland for comparison. (4) All British growers are invited to send blooms.

The Aubergine.—Large quantities of this excellent fruit (Solanum melongena var. ovigerum) are grown in the Valley of the Rhone and in the Departments of the South-East and find their way mostly to London. An account of the cultivation of the Egg plant, or Aubergine, is contributed by M. Henri Blin to *Le Jardin*, p. 158, 1914. As travellers are aware, the Aubergine is not only delicious when cooked, but cut in slices and dried in the sun, as it is in the South of France, it is also excellent.

Publications Received.—*Impurities of Agriculture Seed.* By S. T. Parkinson, B.Sc., and G. Smith, B.Sc. Agri. (Headley Bros. 3s.)—*Bird Studies.* By W. Percival Westell, M.B.O.U. (Cambridge University Press.)—*The Pig's Tale and Other Recitations.* By Chas. T. Druery. (Elliot Stock, 7, Paternoster Row, London.) 6s. net.—*Flowering Plants of the Riviera.* By H. Stuart Thompson. (Longmans, Green and Co., London.) 10s. 6d. net.

SOCIETIES.

NATIONAL ROSE.

July 7.—The great summer Rose show of the National Society at Regent's Park on this date was exceedingly successful. The anticipated ill effects of the cold May and the recent storms were but little seen. In most instances the blooms were of high quality, both as regards size and appearance, although the entries generally were not so numerous as last year, the disparity being noticeable principally in the classes reserved for amateurs. Queen Alexandra and the Empress Marie of Russia paid a visit to the show at noon and closely inspected the exhibits. During the afternoon there was a large attendance, and the interest which is always centred in the " New Rose Tent " was even greater than usual. A long queue was formed outside the tent, and this continued until 6.30 p.m. The new large tent which contained all the groups and exhibition Roses was a great success, both from a spectacular point of view and the well-being of the blooms. The weather was favourable, and the blooms remained fresh throughout the day. There were 5 Gold and 1 Silver-gilt Medals awarded to new seedling Roses. With the assistance of Mr. Frank Reader, of the R.H.S., the hon. secretary (Mr. Edward Mawley) and his assistants made excellent arrangements, which tended to the success of the event.

AWARDS.

Gold Medals.

Rose Mrs. Bertram Walker (*H.T.*).—A fragrant Rose of the form of George Dickson and in colour salmon flushed with pink. The accompanying plant showed a free habit, and it is said to be perpetual flowering. Shown by Messrs. Hugh Dickson, Ltd.

Rose Augustus Hartmann (*H.T.*).—The most vivid coloured of the new Roses. The shade of colour varies, but generally it is a bright cerise pink. The shape is similar to the foregoing, and this variety should prove to be a great favourite when it is placed in commerce. Shown by Messrs. B. R. Cant and Sons.

Rose Margaret Dickson Hamill (*H.T.*).—A very charming and fragrant bloom, suggestive of Madame Ravary but of larger size and flushed with salmon. Said to be a vigorous grower. Shown by Messrs. Alex. Dickson and Sons.

Rose Majestic (*H.T.*).—An exceedingly handsome variety of globular form. The satiny-pink petals are of very good substance, and the flower is fragrant. Shown by Messrs. Wm. Paul and Son.

Rose Clytemnestra (*H.T.*).—The award to this variety occasioned some surprise. It is a free-flowering bush Rose of spreading habit. The buds are prettily flushed with pink, and the fully-opened loose-petalled flowers are salmon-tinted. Shown by Rev. J. H. Pemberton.

Silver-gilt Medal.

Mrs. Maud Dawson (*H.T.*).—A vigorous variety which bears globular blooms on which the brick-red colour is lightly flushed with plum-purple. Shown by Messrs. Alex. Dickson and Sons.

Certificates of Merit.

Rose Butterfly.—Shown by Messrs. Paul and Sons.

Rose Mrs. Arthur Bide.—Shown by Messrs. S. Bide and Son.

Rose Pemberton's White Rambler.—Shown by Rev. J. H. Pemberton.

Rose Dolly Varden.—Shown by Messrs. Paul and Sons.

COMPETITIVE CLASSES.

Nurserymen.

GROUPS OF ROSES

The "Representative Groups of Roses," arranged on a floor space of 250 square feet at the far end of the large tent, were the finest spectacular feature of the show. There the large trade growers displayed uncountable numbers of splendid exhibition blooms and many graceful floriferous plants of the cluster-flowering varieties. Such exhibits as these together with those in the two classes which have allotted to them goodly lengths of staging for the arrangement of large collections of Roses are " the making of a show."

Messrs. Hobbies, Ltd., Dereham, devised a new style of arrangement in the premier class, and were rewarded with the first prize. The *motif* of their attractive group might almost be described as a Rose garden, except for the hanging baskets of Rayon d'Or; but the chief features were a dainty pergola and walk at the back, and masses of cut Roses in front. The fullest advantage was taken of the space provided, and Messrs. Hobbies made a memorable display. The principal varieties so effectively used were Leuchtfeuer, Old Gold, Marquise de Sinety, Effective and John Green.

The 2nd prize group, by Messrs. Wm. Paul and Son, Waltham Cross, contained many more high-class Roses, but the arrangement was not so effective. Nothing could be finer than the pillar and standard Roses, from which long trails of flowers hung in graceful profusion. The groundwork was composed of baskets filled with fresh blooms, including the richly-coloured, fragrant varieties Louis van Houtte and Chateau de Clos Vougeot.

In the third prize group, shown by Messrs. Paul and Son, Cheshunt, rather too much was sacrificed to lightness, but the background was exceedingly pleasant to look upon.

The groups, placed on staging 33 feet by 3 feet, at the opposite end were magnificent spectacles. High up against the walls of the tent the competitors massed large numbers of blooms, chiefly of the cluster-flowered varieties, whilst nearer to the eye were placed bowls and vases of exhibition blooms. Mr. F. M. Bradley, Peterborough, won the 1st prize with an imposing array which included splendid blooms of such sorts as H. Vernet, Avoca, Maréchal Niel, Mme. J. Gravereaux and J. B. Clark. The 2nd prize exhibit of Messrs. W. and J. Brown, Peterborough, failed, in comparison, in the background, but was fully equal in the frontal stands of exhibition Roses. Here also the red varieties were especially good, and included Hugh Dickson, George Dickson and J. B. Clark of exceptional quality; 3rd, Messrs. Stuart Low and Co., Enfield, who specialised with the rich yellow Rayon d'Or and the white British Queen.

In the smaller table group class, which allowed a run of 20 feet, Messrs. G. Jackman and Son, Woking, were decidedly 1st. Their group contained a profusion of blooms of high quality and was very harmonious. The principal stands contained Hugh Dickson, Marquise de Sinety, Dorothy Page Roberts and Lady Hillingdon; 2nd, Messrs. H. Lane and Son, who had fewer blooms, but the centre piece of Lyon Rose was magnificent; 3rd, the Rev. J. H. Pemberton.

EXHIBITION ROSES.

Seventy-two Blooms Distinct.—The Championship Trophy was won by Messrs. B. R. Cant and Sons, Colchester, who staged 72 magnificent blooms of exceedingly even quality and in fresh condition. The following varieties were shown, and those in italics impressed us as being amongst the best :—

Ben Cant, Mildred Grant, J. B. Clark, Marquise de Ganay, *Augustus Hartmann*, Bessie Brown, Dupuy Jamain, *O. Terks*, Colchestria, Mrs W. J. Grant, Lady Helen Vincent, Capt. Hayward, *Juliet*, Edward Mawley, Mrs. Myles Kennedy, Desdemona, *Mrs. John Laing*. Florence Spaull, *Dr. O'Donel Browne*, Catherine Mermet, Mrs. A. Coxhead, Killarney, Commandant Félix Faure, Ethel Malcolm, Avoca, Mrs. Cornwallis West, Alfred Colomb, Caroline Testout, Gloire de Chédane Guinnoiseau, Madame Jules Gravereaux, Mrs. Stewart Clark, Mrs. Harmsworth, Mrs. T. Roosevelt, Elizabeth, *Lyon Rose*, Prince Arthur, St. Helena, Claudius. White Maman Cochet, Helen Keller. Ulster, Mabel Drew, Captain Cant, A. K. Williams, Earl of Warwick, Lieutenant Chaure, Frau Karl Druschki, *Horace Vernet*, Mrs. Maynard Sinton, *George Dickson*, Lady Barham, Marie Baumann, Dean Hole, Comte de Raimbaud, *Her Majesty*, Lady de Bathe, Fisher Holmes, Mme. Constant Soupert, Victor Hugo, *Maman Cochet*, Hugh Dickson, Mrs. Foley Hobbs, Ulrich Brunner, J. L. Mock, Marie van Houtte, Yvonne Vacherot, British Queen, Beatrice, Papa Lambert, Leslie Holland, Mrs. Sam Ross and Mrs. George Shawyer.

The 2nd prize collection of Messrs. R. Harkness and Co., Hitchin, included exceedingly good blooms of Lohengrin, Mrs. A. E. Coxhead, Mme. Constant Soupert, Duchess of Westminster, George Dickson, Gustave Piganeau and Helen Keller. The 3rd prize was awarded to Messrs. Frank Cant and Co., Colchester.

Forty varieties; 3 blooms of each.—The 5 exhibits in this class, for which each competitor required 5 boxes, filled a long stretch of tabling, and attracted a deal of admiration. The 1st prize was won by Messrs. B. R. Cant and Co., who clearly outpointed their competitors. The trios were judged as units, and in this respect, as well as in individual quality, Messrs. Cant were especially good. Juliet, J. B. Clark, Mildred Grant, George Dickson, Victor Hugo, Captain Hayward, and Mrs. Stewart Clark are the names of a few sorts so well shown. 2nd, Messrs. D. Prior and Son, Colchester, whose trios of Horace Vernet, Captain Hayward, Jonkheer J. L. Mock, and Mrs. John Laing were splendid. 3rd, Messrs. Frank Cant and Co., Colchester, whose best trios were of Frau Karl Druschki, George Dickson, Dean Hole, and Lieutenant Chaure.

Forty-eight blooms, distinct. — The quality of the nine exhibits in the China Trophy class did not reach the high standard of the blooms in the first class. In most instances the blooms were uneven, and the outer petals showed signs of the recent bad weather. Mr. John Pigg, Royston, Herts, won the 1st prize, showing large blooms of Mrs. Joseph Welch, George Dickson, British Queen, Dean Hole, and Lady Alice Stanley; 2nd, Messrs. W. and H. Burch, Peterborough, who placed Mildred Grant, Duke of Edinburgh, Dean Hole, and J. B. Clark; 3rd, Mr. G. Prince, Oxford.

Twenty-four varieties; 3 blooms of each.—The 1st prize collection of Messrs. C. and W. H. Burch, Peterborough, was consistently good; their trebles were evenly matched, and the colours were bright and fresh. Of this splendid exhibit the outstanding varieties were Ulrich Brunner, Earl Warwick, O. Terks, Mme. Jules Gravereaux, Mr. A. E. Coxhead, and Mildred Grant. 2nd, Messrs. J. Burrell and Co., Cambridge, who showed smaller blooms, which were equally fresh and well-formed.

Twenty-four blooms, distinct.—In the 1st prize stand exhibited by Mr. J. Mattock, Oxford, was a magnificent bloom of Mrs. Foley Hobbs, which received the premier card as being the best Tea Rose in this division. Other varieties shown in good condition were George Dickson, Mrs. John Laing, and Bessie Brown. 2nd, Mr. Charles Turner, Slough, who had exceedingly fine blooms of Suzanne Marie Rodocanachi, Alfred Colomb, and W. R. Smith.

Twelve varieties; 3 blooms of each.—Of the 2 exhibits that from Mr. W. R. Chaplain, Waltham Cross, was decidedly the better, his trios of Caroline Testout, Avoca, and Lyon-Rose were especially good. 2nd, Mr. C. H. Green, Hitchin.

TEAS AND NOISETTES.

Twenty-four blooms, distinct.—In Mr. Henry Drew's 1st prize exhibit the pale varieties were pre-eminent, and of them White Maman Cochet, Mrs. Foley Hobbs, Alex. Hill Gray, and Molly Sharman Crawford were splendid. 2nd, Mr. Geo. Prince, who had an especially grand bloom of Mme. Jules Gravereaux.

Twelve blooms, distinct.—The 1st prize in this class was won by Mr. John Mattock, who staged well-formed examples of such sorts as White Maman Cochet, Mrs. Foley Hobbs and Minnie Graham; 2nd, Messrs. G. and W. H. Burch, Peterborough.

Sixteen varieties; 3 blooms of each.—These trios were fully equal in quality to the Teas and Noisettes in the preceding classes. The 1st prize was awarded to Mr. H. Drew, whose flowers of Mrs. Herbert Taylor, W. R. Smith, Mrs. Myles Kennedy and Auguste Comte were especially pleasing; 2nd, Messrs. G. and W. H. Burch.

BLOOMS IN VASES.

The 9 vases of Tea and Noisette varieties which won the 1st prize for Mr. H. Drew included a vase of Auguste Comte, which gave a welcome patch of colour. Maman Cochet and Mme. Jules Gravereaux were also unusually good; 2nd, Messrs. D. Prior and Son, who were the only exhibitors of 9 varieties, and were awarded the 1st prize for a bright and fresh collection.

In the class for 18 varieties of perpetual decorative Roses Mr. C. Turner, Slough, showed a very good collection, including Lady Hillingdon, Rayon d'Or and Ecarlate; 2nd, Messrs. H. Dickson, Ltd., Belfast. The best exhibit of 9 varieties was arranged by Mr. E. J. Hicks.

The A. C. Turner Cup offered for 36 distinct varieties of decorative Roses was won by Messrs. F. Cant and Co., who made a splendid display with such sorts as Crimson Damask, Rayon d'Or, Chateau de Clos Vougeot and Rouge Angevine; 2nd, Mr. J. Mattock.

In the class for 12 varieties, Mr. C. Turner, Slough, took the 1st place with such varieties as Mme. A. Chatenay, A. R. Godwin, and General MacArthur; 2nd, Mr. J. Pigg, Royston. In the class for 12 varieties of summer-flowering Roses Messrs. W. Spooner and Son, Hounslow, had beautiful vases of Macrantha, Moschata alba and Delight, gaining the 1st prize.

The new decorative Roses in the first prize collection of Messrs. Alex. Dickson and Son were Queen Mary, Mrs. S. T. Wright, Carine, Irish Fireflame, Lady Dunleath, Red Letter Day, Chrissie MacKellar, Verna MacKay and Old Gold.

Messrs. F. Cant and Co. won the 1st prizes for 12 varieties of dwarf Polyantha Roses and for a similar number of Wichuraiana Roses.

The baskets of Roses were again very beautiful and made attractive displays of massed varieties. In the class for 9 baskets Messrs. Hugh Dickson, Ltd., Belfast, won the 1st prize, and Mr. H. Drew was similarly successful in the class for 5 baskets.

Messrs. W. and J. Brown, showing George Dickson and Mrs. A. Carnegie, won the 1st prize offered for 12 crimson and 12 white Roses, arranged alternately. Frau Karl Druschki, staged by Messrs. D. Prior and Son, was the best H.P. variety shown as a collection of 18 blooms; Mrs. A. Carnegie, shown by Messrs. J. Cocker and Sons, was the best bloom in class 27; and Mrs. Foley Hobbs, exhibited by Mr. J. Mattock, the best T. or N. Rose.

In the class for 9 blooms of any new Rose Messrs. J. Cocker and Sons won the 1st prize with Mrs. A. Carnegie, and Messrs. Alex. Dickson and Son were similarly successful in a class for 12 blooms of New Roses, distinct sorts, where they staged good examples of George Dickson, H. V. Machin, Countess of Shaftesbury, and Mrs. Amy Hammond.

AMATEURS' CLASSES.

As a rule an interesting increase in competition took place in each succeeding division of the schedule in inverse proportion to the number of Roses grown by the exhibitor. Thus the highest number of entries in the open classes and those open to growers of fewer than 2,000 plants was 7. The President's Class, open to growers of fewer than 1,000 plants, showed an entry of 10. The 12 blooms from growers of fewer than 750 plants rose to 12 entries, 14 entries came for 6 blooms from growers of fewer than 500 plants, and 19 from growers of fewer than 200. In Division G, open only to growers of fewer than 1,000 exhibition Roses, the President's Prize for 12 blooms was won by Mr. C. Lamplough, Alverstoke. These blooms were of unusually fine quality. Mrs. Foley Hobbs was the best Tea Rose shown by an amateur. Bessie Brown, Mrs. Welch, and Frau Karl Druschki were also blooms fit to meet any in open competition. Mrs. H. Balfour, Headington, was 2nd, and Mr. E. G. Mocatta, Weybridge, 3rd. For 9 blooms of any Rose except T. or N., Mr. Lamplough was again placed 1st, with the variety Frau Karl Druschki.

Division H was restricted to growers of fewer than 750 exhibition Roses. The Ben Cant Memorial Prize for the best 12 blooms was won by Mr. F. H. Cook, Colchester. Geo. C. Waud, J. B. Clark, and Gloire de C. Guinosseau were varieties of special merit. For 6 blooms of any Rose except T. or N. the Rev. F. Burnside, Great Stambridge, was placed 1st with Dean Hole. Frau Karl Druschki won the 2nd prize for Mr. Biggleston. The class for four distinct varieties, 3 blooms of each, from exhibitors in either of the above divisions, was won by Mr. C. Lamplough, with first-class blooms of Mrs. F. Hobbs, Mme. J. Gravereaux, Gloire de C. Guinosseau, and Frau Karl Druschki.

In Division I for growers of fewer than 500 plants, the best 9 blooms (Class 52) were from Mr. W. Panckridge, Petersfield. The best 6 blooms, distinct, were from Mr. H. C. Baker, Bayfordbury, while the best 6 blooms of any Rose except T. or N. were magnificent specimens of Dean Hole from Mr. W. P. Panckridge. The Roses throughout this division were particularly good, White Maman Cochet and Geo. C. Waud being shown very finely.

Division J, for growers of fewer than 350 Roses, drew still keener competition. The best 9 blooms, distinct, were shown by Mrs. Denman Murray, Ryde, Isle of Wight. The best 6 blooms, distinct, were exhibited by Mr. R. Woosnam, Hutton. Frau Karl Druschki, shown by Mrs. D. Murray, won the 1st prize in the class for 6 blooms of any Rose except T. or N. Mr. A. W. Atkinson, Palmers Green, had the winning box of 3 blooms of each of 4 varieties, which was open to the two preceding divisions.

Division K was open only to growers of fewer than 200 Roses. The best 9 blooms were exhibited by Mr. C. A. L. Brown, Hatfield Peverel. Mrs. Clark and White Maman Cochet were very fine, and Geo. C. Waud gave a lovely piece of colour. The Rev. T. Kershaw, Warminster, had the best 6 blooms, distinct. Mr. A. F. Passingham, New Barnet, was 1st with 6 blooms in not fewer than 4 varieties (there were 13 exhibits in this class); the Rev. T. Kershaw won with 4 varieties, 3 blooms of each; and Mr. W. H. Simpson, Ipswich, was 1st with 6 blooms of any Rose except T. or N. There were many fine Roses scattered throughout this section, and it was curious to note that in this last class 6 of 8 competitors all showed Frau Karl Druschki, which won 1st, 2nd, and 3rd places.

Thirty-six blooms, distinct.—The Champion Trophy was won by Dr. T. E. Pallett, who exhibited an excellent set of distinct blooms. The very best varieties in this display were Mildred Grant, Gloire de C. Guinoisseau, Maman Cochet, Frau Karl Druschki, Ulrich Brunner and George Dickson; 2nd, Mr. Conway Jones, who had good blooms of Mamie, Florence Pemberton and Mrs. A. Carnegie.

The class for 24 blooms, distinct, was not so good. The 1st prize was awarded to Mr. Conway Jones, who was the only exhibitor; his best blooms were of Captain Hayward, Star of Waltham and Mildred Grant.

The 12 blooms of Mildred Grant which won the 1st prize in Class 4 for Dr. T. E. Pallett were exceedingly fine.

In the class for growers of fewer than 3,000 plants Mr. W. Times won the 1st prize for 24 distinct varieties with a magnificent collection, which included Mrs. E. Mawley, Bessie Brown and Ulrich Brunner.

The best 12 blooms of any Rose except a Tea or Noisette were of Dean Hole, shown by Mr. W. Times, and the best 9 were of Frau Karl Druschki, by Mr. J. Hart.

In the extra class, which required 6 varieties, 3 blooms of each, Mr. J. Hart was the only exhibitor, but he showed very good specimens and was awarded the 1st prize.

Metropolitan Classes.

The Suburban Champion Class falls in this section. The Challenge Cup is awarded for the best 6 blooms, distinct, grown within 8 miles of Charing Cross. This was finely won by Mr. A. W. Atkinson, Palmers Green, with Gloire de C. Guinosseau, Mrs. M. Kennedy, Dean Hole, Mabel Drew, Mrs. F. Hobbs, and George Dickson. Mr. S. R. Laughton, Catford, won the next class for 6 blooms, which was only open to growers of fewer than 300 plants.

In the class for 6 blooms, distinct, grown within 10 miles of Charing Cross, the new "Suburban Champion," Mr. A. W. Atkinson, with some very lovely blooms, was again placed 1st.

The Harkness Cup class is an additional class open to all amateurs. Twelve distinct blooms must be shown. There were five contesting exhibits, the best being shown by Mr. T. E. Pallett, Earls Colne. The Hammond Prize for six new Roses, distinct, resulted in an interesting competition, and the awards were (1) Mr. G. A. Hammond, Burgess Hill (Coronation and Mrs. C. Hunter were noticeably good), and (2) Mrs. B. Fortescue, Dropmore. The final class in this section was for an arrangement of 7 Roses in a space of 5ft. by 3ft. Mr. E. G. Mocatta, Weybridge, won the 1st prize, and Mr. H. R. Darlington, Potters Bar, the 2nd prize; both showed very pretty groups.

Exhibition Roses—Tea and Noisette.

The amateurs' Teas and Noisettes were particularly good, and in class after class we were tempted to note down blooms of more than average quality. Mrs. Foley Hobbs, White Maman Cochet and Mme. J. Gravereaux occurred again and again. The Challenge Trophy for Teas and Noisettes was won finely by Mrs. Bevil Fortescue, Dropmore.

Mr. C. C. Eversfield, Horsham, won the Alfred Tate prize (Open) for 12 blooms, distinct; Mrs. B. Fortescue won another 1st prize with 8 varieties, 3 of each; and Dr. T. E. Pallett, Earls Colne, had the best six blooms of any one variety in some lovely flowers of White Maman Cochet.

In the division for growers of fewer than 500 T. and N. Roses, the best 12 blooms, distinct, were from the Rev. J. B. Shackle, Maidenhead; while the best 6 blooms of any one variety were the Rev. F. R. Burnside's White M. Cochet.

Although the only entry for 9 blooms, distinct, from growers of fewer than 200 T. and N. Roses, Mr. H. L. Wettern's, Croydon, exhibit very worthily won the Prince Memorial Prize.

The last division was for growers of fewer than 100 T. or N. Roses. Mrs. Denman Murray had the winning box of 6 blooms, distinct; and Mr. C. A. L. Brown, Hatfield Peverel, the best box of 6 blooms in not fewer than 4 varieties.

Perpetual Flowering Decorative Roses. Classes 90-93.

Exhibition Roses, except a few sorts, which are also good garden Roses, are excluded from these exhibits. Mrs. E. M. Wightman was placed 1st in the class for 3 baskets of cut Roses. Mr. J. W. Smith, Watford, with a lovely group of Irish Beauty, had the winning single basket of cut Roses.

Decorative Roses.

In the class for 12 varieties, distinct, in a space 5ft. by 3ft., there were some good exhibits, and the awards were:—1st, Mr. H. L. Wettern, Croydon; 2nd, Mr. E. G. Mocatta, Weybridge; and 3rd, Viscountess Enfield, Barnet. General McArthur, American Pillar, and Mme. A. Chatenay were effective constituents of the winning group. In the corresponding class for 6 varieties, in spaces of 3ft. by 3ft., the Rev. J. B. Shackle, Maidenhead, was placed 1st, Mr. H. L. Wettern, Croydon, had the best six vases of Wichuraianas; the 2nd prize exhibit from Miss B. Langton included the little-known, but very pretty, François Juranville.

Miscellaneous.

This section included a number of small classes for amateurs who have never won a prize, for new members, and for members living in the Metropolis. Mrs. J. Cradock, Ryde, Isle of Wight; Mr. J. G. Mead, Hemel Hempstead; and Mr. F. A. Hanley, Northwood, won 1st prizes in the first group. Mrs. R. Smith, Hemel Hempstead, and Mrs. Seth Smith, Reigate, were new members winning 1st prizes.

Decorative Classes.

Some of the table decorations were particularly pretty, though novelty was found only in the use of new varieties and not in any fresh development of method.

In the classes for dinner tables decorated with single Roses, Irish Elegance filled five of the nine exhibits, and Irish Fireflame filled the other two. The 1st was won by Mrs. J. Walter Smith, Watford. The design was kept appropriately low in outline; out, in addition to the central bowl, 10 small vases found place on the 6ft. by 4ft. table, and two patterns of vase were used. Mrs. Walter Morrison, Reigate, who was 2nd, and Countess Olga Pontiatine, Weybridge, who was 3rd, also used Irish Elegance. The corresponding class for Roses other than singles found Mrs. E. M. Burnett, Southampton, successful. The design was a very simple one, but Mme. Ed. Herriot presented a wonderful piece of colour.

Mrs. Bide, Farnham, was placed 1st in the Open class for a decorated table, which was made glorious by the use of Mme. Ed. Herriot; but the colour here seemed a more important point than the arrangement.

WOLVERHAMPTON FLORAL FETE.

July 7, 8, 9.—The twenty-sixth annual show opened on Tuesday last, in the beautiful West Park, Wolverhampton, and continued until Thursday last.

The fête, as the show is known locally, has the patronage of the borough authorities. The Mayor, Councillor F. H. Skidmore, is President, many of the Committeemen are either Aldermen or Councillors, and the public park is loaned by the Corporation, so that the exhibition has quite a civic character.

The first day opened gloriously fine, but a little rain fell in the afternoon, although not sufficient to deter visitors. The exhibits generally were of a high standard. The groups of plants were better than usual; indeed, we have never seen finer displays. Carnations, hardy flowers, Sweet Peas, Begonias, and fruit are other subjects that were especially good, but the Roses were disappointing. There was some grumbling at the late placing of the non-competitive awards, but with the exception of this small oversight everything passed off most successfully, and the show was well managed.

Groups.

The groups of indoor foliage and flowering plants were uniformly good, and the display in the large tent set apart for them was equal to anything we have seen at a provincial show. There were five magnificent exhibits in the class for a display of miscellaneous plants in or out of bloom grouped for effect in a space of 30 feet by 14 feet. The schedule permitted the use of climbing plants, Orchids, and any kind of cut flowers. The best of five exhibits was shown by Messrs. J. Cypher and Sons, Cheltenham, and this firm was awarded the 1st prize. It was a magnificent group in which fine foliage plants predominated, with sufficient flowering plants to add brightness where at points the more sombre greenery needed a touch of lightness as contrast. The usual archway was included at the back, being well worked into the scheme, crowned with a fine Kentia Palm, and having splendid specimens of Phoenix, one on either side. The flowers were mainly of Orchids, all of exceptional merit, with a few Liliums, Ixoras, Lantanas, Lily-of-the-Valley, and others for variety. The Codiaeums (Crotons) were splendidly coloured, and the whole was arranged with a master hand; 2nd, Sir G. H. Kenrick, Edgbaston (gr. Mr. J. Macdonald), with a group but little inferior, but lacking the rich colouring and with fewer flowers. Down the archway hung rose-coloured Begonias and Golden Selaginella, these with Ferns hiding the cork-covered framework; 3rd, Mr. W. A. Holmes, Chesterfield; 4th, J. A. Kenrick, Esq., Edgbaston (gr. Mr. A. Cryer).

The class for a group of ornamental foliage plants, including Ferns, but no flowers, arranged on a space of 250 square feet, was represented by four exhibits, and here Mr. W. A. Holmes proved most successful. The arrangement was good, the group being broken up by specimen plants on stands of varying heights, and high-colouring prevailed throughout, each plant receiving its full value for effect. Codiaeums, Dracaenas, Begonia Rex, Marantas, Caladiums, Acalypha, Alpinias, and a magnificent specimen of Ananassa sativa variegata were the principal subjects; 2nd, Sir G. H. Kenrick, who made use of an archway, the splendid specimens of Selaginella and Anthuriums adorning it meriting high praise. The blending in this exhibit was good, the colour scheme being very fine; 3rd, Mr. W. R. Manning, Dudley; 4th, J. Cypher and Sons.

The best group of plants arranged for effect on a space of 200 square feet by a gentleman's gardener or amateur was shown by B. Howson, Esq., Market Drayton (gr. Mr. A. Townsend); 2nd, Mr. A. G. Bastock, Hall Green, Birmingham.

The class for 20 plants in pots not exceeding 10 inches in diameter, to include flowering and foliage specimens, saw Messrs. J. Cypher and Sons easy winners with fine Statice intermedia, Ixora Pilgrimii, I. coccinea, Erica ventricosa, Clerodendron Balfourii, Codiaeum Resplendent, Palms, Ferns and Maranta as his chief plants; 2nd, Sir T. C. Mander, Esq., Tettenhall Wood (gr. Mr. J. F. Simpson), with highly-coloured Codiaeums, Allamanda Hendersonii, Ixora Prince of Orange, Clerodendron fallax, Gloriosa superba, and others; 3rd, Mrs. H. Mander, who exhibited fine plants of Dracaena Victoria and D. superba.

Messrs. J. Cypher and Sons had the best of four exhibits in the class for a collection of decorative plants and bunches of cut flowers arranged for effect. It was a much lighter arrangement than that of their competitors. Sprays of Oncidium, Origanum and Asparagus plumosus with choice Odontoglossums, Cypripediums, and other Orchids, bright spathes of Anthurium Scherzerianum, and bold blooms of Lilium longiflorum all contributed to a very pretty exhibit. 2nd, Sir G. H. Kenrick.

The class for a group of flowering plants, one kind only, offered plenty of scope, and Hippeastrums, Carnations, Gloxinias, Clerodendron fallax, Heliotropium, Ivy-leaved Pelargoniums and Celosias were shown. The exhibitor of the Hippeastrums was Mr. J. Kenrick, who won the 1st prize easily. It is seldom that Hippeastrums of this high quality are seen in bloom in July, and the plants were pleasingly arranged on tiers in a setting of Adiantum Ferns. H Mander, Esq., Wolverhampton (gr. Mr. C. Weaver), won the 2nd prize for a good batch of Perpetual-flowering Carnations; and the 3rd prize was awarded to H. Willcock, Esq., Wolverhampton (gr. Mr. S. Highfield), for Gloxinias.

The class for a flower, fruit, and vegetable stall, set up as for sale purposes in a shop window, did not appeal to us. An exhibit, like the conventional greengrocer's window, was awarded the 1st prize, and the other exhibits showed too much straining for effect. The 2nd prize exhibit was like a group of ornamental stove plants with a few baskets of fruit thrown in.

Begonias.

The class for a group of tuberous-rooted and fibrous-rooted Begonias in pots was responsible for one of the finest flower groups in the show, the exhibitors being Messrs. Blackmore and Langdon, Twerton-on-Avon, Bath. The plants were like great posies of the loveliest colours conceivable; some of the blooms were like Paeonies, others like big Roses. Empress Marie, white, Dainty, pink with salmon edge, and Colonel Cox, scarlet, are three sterling varieties; 2nd, Mr. F. Davis, Pershore.

C. Marston, Esq., Tettenhall Wood (gr. Mr. W. Wall) exhibited the best collection of 12 plants in flower, showing large, healthy specimens of the tuberous-rooted section, with fresh but not over-large flowers; 2nd, Mr. F. Davis, Pershore.

Gloxinias were best shown by W. Evans, Esq., Wolverhampton (gr. Mr. A. Jones).

Carnations.

The schedule contained two classes for Carnations, the one for a display of cut blooms excluding Souvenir de la Malmaison varieties, the other for "Malmaisons." The result in the first class was splendid, and the 1st prize was awarded for some of the finest Carnations we have seen this season. It was a bold effort in every respect, and the exhibitor, Mr. Chas. Wall, Bath, is to be congratulated on the result. Mandarin, Carola, White Wonder, Mr. C. Ward, R. F. Felton, Enchantress, Lady Meyer, Linkman (border), and Rose Doré are a selection; 2nd, The Clury Carnation Nurseries, Langley, Buckinghamshire; 3rd, Mr. C. Engelmann, Saffron Walden.

Two competitors showed in the class for Souvenir de la Malmaison varieties, in which the Duke of Newcastle, Worksop (gr. Mr. S. Barker), excelled with superb blooms; 2nd, Capt. G. Lubbock, Warminster (gr. Mr. Lowe).

For 8 vases of Tree Carnations, not fewer than 3 varieties, Dr. R. E. Loney, Wrenbury, Cheshire, was placed 1st; 2nd, Mr. H. Aveling, Tipton.

Roses and Sweet Peas.

It was unfortunate for Wolverhampton that the National Rose Society's Exhibition clashed with the local show, for the exhibits of Roses were not so good as we have seen on former occasions at this fine provincial show.

Cut Blooms.—The class for 72 blooms, distinct, attracted four exhibitors, and the 1st prize was won by Mr. W. H. Frettingham, Nottingham, with blooms of moderate quality, the finest examples being Mme. Jules Gravereaux, Gustave Piganeau, Dean Hole, J. B. Clark, Bessie Brown, Chas. Lefebvre, A. K. Williams, Lyon, and Lieutenant Chauré; 2nd, Messrs. G. and W. H. Burch, Peterborough, who showed Avoca, George Dickson, Laurent Carle, Marie Baumann, Mrs. Myles Kennedy, and Maman Cochet; 3rd, Messrs. Perkins and Sons, Coventry.

Thirty-six blooms, distinct.—Mr. J. Mattock, Oxford, showed the best exhibit of seven. His blooms were of average quality, but many outer petals showed damage. The largest and finest bloom was the red George Dickson. Horace Vernet, Reynolds Hole, Lyon, Mrs. A. E. Coxhead, Königin Carola and His Majesty are a selection of the others in this collection; 2nd, Mr. W. T. Mattock, Oxford; 3rd, Mr. W. H. Frettingham.

Nine baskets of Roses.—This is a pretty way of showing exhibition blooms, but the quality generally was only mediocre. The 1st prize was won by The King's Acre Nurseries, Ltd.

Five baskets of Roses.—Mr. J. Mattock won easily with the varieties Lyon, Mrs. Stewart Clark, Mme. Abel Chatenay, Irish Elegance and Frau Karl Druschki; 2nd, The King's Acre Nurseries, Ltd.

Eighteen blooms of Tea varieties, distinct.—Mr. J. Mattock showed the largest blooms, and was awarded the 1st prize. The specimen of Nita Weldon was of exceptional size; White Maman Cochet, Mme. Constant Soupert, Mrs. E. Mawley, and Muriel Graham were others of merit; 2nd, Mr. W. T. Mattock.

Collection of Roses.—This was a good class, and on this occasion the space was increased to 20 feet, owing to the success last year, when only 12 feet was required to be filled. Messrs. Gunn and Sons, Olton, repeated their success of last year, winning the 1st prize easily. Mr. John Mattock was placed 2nd, and Mr. Sims, Barrowash, 3rd.

Messrs. Gunn and Sons employed a dark velvet ground some 12 feet high, and against this arches of rambler varieties showed in fine relief. Beneath the arches were Hybrid Teas and Hybrid Perpetuals arranged in big epergnes or vases. Irish Fireflame, George Dickson, Juliet, Rayon d'Or, Beauté de Lyon and Mme. Edouard Herriot were all shown well. Mr. Mattock had pillars of Rambler varieties at the back with baskets and bamboo stands furnished with choice H.P.s and H.T.s.

In the Amateurs' Classes Mr. J. A. L. Fellowes, Attleboro', won 1st prizes for (a) 36 blooms; (b) 6 distinct varieties, 3 blooms of each sort; (c) 24 blooms, distinct; (d) 12 blooms, distinct; and (c) 12 blooms of Tea varieties, Mr. R. F. Hobbs following in each case.

Sweet Peas.—A class was provided for 18 varieties of Sweet Peas, in which Sir Randolf L. Baker, Bart., Blandford, Dorsetshire (gr. Mr. A. E. Usher), had a "runaway" win, with easily the best flowers in the show. His superb collection included the following varieties:—Thos. Stevenson, Agricola, Edrom Beauty, Elsie Herbert, Rosabelle, Constant Hinton, Lavender Geo. Herbert, Hercules, Edith Taylor, W. P. Wright, Marks Tey, Audrey Crier, Mrs. Cuthbertson, Maud Holmes, Princess Victoria, Tennant Spencer, and an unnamed maroon-coloured variety; 2nd, Capt. G. Lubbock, Warminster (gr. Mr. J. B. Lowe), with fine spikes of Thos. Stevenson, Lady Miller, Prince George, Barbara, Elfrida Pearson and Dobbie's Cream.

Messrs. Webb and Sons offered prizes for 6 bunches of named varieties, and Sir Randolf Baker was again successful with equally good flowers as in the former class.

In the gentlemen's gardeners and amateurs classes Sir R. Baker also swept the board. He was placed 1st in the society's class for 12 varieties and in Messrs. Robert Sydenham's class for 9 varieties.

Hardy Flowers.

Exhibitors of hardy flowers were in strong force, and keen rivalry prevailed in the important class for a collection arranged on a table space 25ft. by 7ft. There were four of these very large exhibits, and the 1st prize was won by Messrs. Fred Smith and Co., Woodbridge. This firm had a superb exhibit; the flowers appeared as fresh as though in the garden, and the exhibitors made the most of the large space at their disposal. We understand that this successful class will be further stimulated next year by increased prizes. At the back of the premier collection was a bank of the pink Malva Olbia, and in front superb specimens of Romneya Coulteri. On either side were tall Eremuri and Delphiniums, other features being bold masses of Gaillardias, Scabiosa Caucasia, Gladiolus Fire King, Verbascum Smith's Hybrid, Phlox Eclaireur, Lysimachia vulgaris, Armeria cephalotes rubra, and Erigeron Quakeress; 2nd, Messrs. Artindale and Son, Sheffield, who featured bold masses of Lilium candidum, Eremurus Bungei, Delphinium Rev. Lascelles, Lathyrus The Bride, Phlox Elizabeth Campbell, and Campanula glomerata superba; 3rd, Messrs. Harkness and Sons, Bedale.

The best collection of hardy flowers shown by an amateur was exhibited by Mr. Frank A. Cook, Tettenhall.

Messrs. Blackmore and Langdon showed the best collection of Delphiniums in a space of 9 feet by 3 feet, followed by Messrs. Harkness and Sons, Bedale, who exhibited the finest new Delphinium—a bold spike of flowers, the outer petals cobalt blue, the inner purplish with white eye. It was named Lyall Swete.

Decorative Classes.

There were 24 decorated tables in three classes. The 1st prize for an arrangement of Sweet Peas only was won by Mr. E. Deakin, Hays Mills, who employed the dainty pale-salmon variety, Lady Miller, relieved with sprays of bronze Selaginella. Other first-prizo winners in these classes were Sir G. H. Kenrick, with Orchids, anl Miss D. Cope, Balsall Heath, Birmingham, who employed a small apricot-yellow Rose. The best bouquet for the hand was shown by Messrs. Perkins and Sons, the best hanging basket by Messrs. Blackmore and Langdon, and the most tasteful arrangement of Violas by Messrs. W. Pemberton and Sons, Bloxwich.

Fruit.

The exhibits in this section were not numerous, but what was lacking in numbers was more than compensated by the splendid quality. The chief class was for a decorated table of dessert fruit consisting of 12 dishes in not fewer than six kinds. The prizes were of the aggregate value of £37; the 1st prize being £17, the 2nd £10.

The two exhibits staged were worthy of this important exhibition, and the 1st prize was awarded to Lord Savile, Ollerton (gr. Mr. G. Doe). The two bunches of Madresfield Court Grape were superb. The berries were large and well finished, whilst the bunches were evenly matched. The other grapes were big bunches of Buckland Sweetwater, with berries of rich amber-yellow colour, Black Hamburgh and Muscat of Alexandria. In the centre of the collection was a superb Melon, and, in addition, there were Early Grosse Mignon and Dymond Peaches, Dryden and another Nectarine, Dr. Jules Guyot Pears, Brown Turkey Figs, and Lady Sudeley Apples. The decorations were white Odontoglossums, Francoa ramosa and pink Carnations—a little overdone, perhaps; 2nd, the Duke of Newcastle, Worksop (gr. Mr. S. Barker), whose grapes were much smaller, but well finished; the two fruits of Melons were magnificent, and there were also good Dymond Peaches, Ribston Pippin Apples, Williams' Bon Chrêtien Pears, and large Nectarines.

Three exhibited in the class for a collection of six kinds decorated with flowers and foliage. The 1st prize was won by the Duke of Newcastle, Worksop (gr. Mr. S. Barker), with Dryden Nectarines, Dymond Peaches, James Grieve Apples, a Melon, Black Hamburgh and Muscat of Alexandria Grapes. The decorations were yellow and heliotrope-coloured Carnations with grasses. 2nd, Lord Savile, with Muscat of Alexandria and Black Hamburgh Grapes, Downton Improved Nectarines, Stirling Castle Peaches, Brown Turkey Figs, and a Melon. The exhibit shown by Mr. H. Andrews was charmingly decorated with pink Carnations and dark blue Heliotrope, lightened with sprays of Gypsophila.

Lord Savile showed the best four bunches of distinct kinds of Grapes, two white and two black. Those of Black Hamburgh were remarkably good. The others were Madresfield Court, Muscat of Alexandria, and Buckland Sweetwater. 2nd, Duke of Newcastle, who had a well-shaped bunch of Madresfield Court, on the small side.

Mr. H. Andrews excelled in the class for two bunches of white Grapes; whilst Lord Savile showed best in the class for two bunches of a black variety.

The best Nectarines were shown by Lord Bagot, Rugeley (gr. Mr. T. Bannerman), the variety Downton; the best Peaches by the Marquis of Northampton, Castle Ashby (gr. Mr. A. R. Searle), who exhibited Peregrine; the best Strawberries by Capt. G. Lubbock, Warminster (gr. Mr. J. B. Lowe); and the best Tomatos by Mr. E. Winchester, Birmingham.

Vegetables.

The Society offered prizes for a collection of ten kinds of vegetables arranged in a space of 6 feet by 4 feet. The 1st prize was won by H. Andrews, Esq., Winchcombe (gr. Mr. G. R. Tooley), who showed good Carrots, Cucumbers, Tomatos, Potatos, Cauliflowers, Marrows, Beans, Celery, and Onions; 2nd, the Marquis of Northampton.

Messrs. Edward Webb and Sons offered prizes in two classes for a collection of eight kinds and a collection of six kinds respectively. The Marquis of Northampton won the 1st prize in the larger class with New Standard Carrots, Viceroy Tomatos, Express Potatos, Long Green Marrows, Supreme Beans, Empress Cauliflowers, Stourbridge Marrow Beans, and Monster White Tripoli Onions; 2nd, Mr. H. Watson Smith, Stourbridge (gr. Mr. H. Davis), who was placed 1st for six kinds, showing good White Tripoli Onions, Stourbridge Marrow Peas, and Regina Tomatos; 2nd, Sir C. T. Mander, Bart.

In Messrs. Sutton and Sons' class for a collection of six distinct kinds the Marquis of Northampton won easily with Princess of Wales Tomatos, Market Favourite Carrots, Windsor Castle Potatos, Purity Cauliflowers, Centenary Peas, and Leviathan Onions; 2nd, Mr. H. Andrews, with fine pods of Quite Content Peas, Superb Pink Celery, Potatos, Tomatos, Onions, and Marrows.

Non-Competitive Exhibits.

The finest nursery firm's exhibit was Messrs. Sutton and Sons' collection of flowers, fruits and vegetables arranged on tabling with black velvet ground. The style of arrangement was charming, and the produce of all kinds of first-class exhibition quality. (Large Gold Medal.)

Messrs. Hewitt and Co., Solihull and Birmingham, showed hardy flowers in great variety, and baskets of Roses. The various subjects were arranged in bunches without overcrowding, and showed well against a dark cloth ground. The quality was superior. (Gold Medal.)

Messrs. Jarman and Co., Chard, showed Zonal-leaved Pelargoniums, Roses, Carnations and Sweet Sultans. (Silver-gilt Medal.)

Messrs. Dicksons, Chester, exhibited Roses and hardy border flowers, for which a Gold Medal was awarded.

Messrs. Ed. Webb and Sons, Wordsley, arranged on a circular kiosk an exhibit of flowers, fruits and vegetables, all of splendid quality. Sweet Peas decorated the canopy, and beneath these was a mass of pink Astilbes with vases of Lilies, Gaillardias, Coreopsis on tabling which contained vegetables and fine Melons. (Large Gold Medal.)

Messrs. Young and Co., Hatherley, exhibited on a table, 25 feet by 5 feet, Perpetual-flowering Carnations, the varieties representing most of the best sorts in cultivation. (Gold Medal.)

Perpetual-flowering Carnations were also exhibited by Mr. A. F. Dutton, Iver (Gold Medal), and The Clury Carnation Nurseries, Langley (Gold Medal).

Messrs. H. B. May and Sons, The Nurseries, Edmonton, exhibited choice stove and greenhouse Ferns. (Gold Medal.)

Messrs. W. Artindale and Son, Sheffield, showed large numbers of Violas against a black velvet ground. (Gold Medal.)

Messrs. John K. Knight, Wolverhampton, exhibited an enclosed garden in the Group Tent, with flagstone pathway. Standard Roses, Pelargoniums and Fuchsias were arranged in grass, and there was a wall and rockery. (Large Gold Medal.)

Messrs. Bakers, Wolverhampton, contributed an exhibit in the large tent, in which they featured a paved garden with Nymphaea pools and a wall garden with plateau on top furnished with a great variety of hardy flowers. (Large Gold Medal.)

Messrs. Dobbie and Co., Edinburgh, showed Roses. The blooms were of splendid quality, but too bunched, and the white ground did not enhance the effect, as there was no greenery. (Gold Medal.)

Robert Sydenham, Ltd., Birmingham, showed Sweet Peas in metal rustic holders. (Silver-gilt Medal.)

Messrs. W. H. Simpson and Sons, Birmingham, exhibited Sweet Peas and Delphiniums. (Gold Medal.)

Miss S. S. Thompson, Handsworth, showed Cacti. (Silver Medal.)

Messrs. Reamsbottom and Co., Geashill, King's Co., showed St. Brigid Anemones. (Silver-gilt Medal.)

Mr. H. N. Ellison, West Bromwich, showed Ferns and Cacti, for which a Silver-gilt Medal was awarded.

Mr. Vernon T. Hill, Langford, near Bristol, exhibited hardy border flowers in variety. (Silver-gilt Medal.)

Messrs. J. Piper and Sons, Bayswater, exhibited hardy flowers. (Silver-gilt Medal.)

ROYAL AGRICULTURAL.

ARBORICULTURAL EXHIBITS AT THE SHREWSBURY SHOW.

June 30—July 3.—In deference to the wishes of the Shropshire Horticultural Society, Orchids, Carnations, Begonias, and other choice greenhouse flowering and foliage plants were not included in this year's show of the Royal Agricultural Society, which took place on the old racecourse at Shrewsbury, and was opened in a sweltering heat on the 30th ult. A tent 160 feet by 85 feet was provided for the accommodation of hardy and semi-hardy trees and shrubs, for which liberal cash prizes and gold and silver medals were offered. The spectacular effect of the arboricultural subjects could not be compared with that made by the magnificent displays of Orchids associated with many of the society's previous exhibitions. But never in the history of the society have so many new trees and shrubs been shown. All the growing specimens had been specially prepared in pots, and with very few exceptions they were displayed on the ground. Special interest was centred in the contributions made by J. C. Williams, Esq., Warrington Park, Launceston, on account of the great number of species exhibited for the first time.

Unfortunately competition was very disappointing, there being only 19 entries from 6 exhibitors in 14 of the 34 classes provided by the schedule. In 5 classes there were two contestants, and 20 classes failed to attract a single competitor.

The first class in which there was an exhibit was one for a collection of new hardy climbing shrubs in or out of flower, arranged in a space of 100 square feet. Mr. L. R. Russell, Tunbridge Wells, was awarded the 1st prize. The specimens ranged in height from 3 feet to 9 feet, and included examples of Vitis heterophylla variegata (beautifully coloured), V. vinifera purpurea (extra good), V. Thomsonii, V. orientalis, V. himalaica (intense purple), V. armata, V. Thunbergii, and V. Henryi, Berchemia racemosa variegata with pleasing silver-coloured foliage, Actinidia chinensis, whose young leaves and stems were clothed with reddish hairs, Clematis montana rubra, Humulus lupulus aureus (richly coloured), Rhyncospermum jasminoides variegata, and a number of very bright-leaved Ivies.

Mr. R. Woodward, Jun., Arley Castle Bewdley, won the 1st prize for 9 new varieties of Berberis.

The most interesting and instructive class was for a collection of rare hardy, or semi-hardy shrubs arranged in a space of 300 square feet. There were two entries. 1st, J. C. Williams, Esq., Warrington Park, Launceston (gr. Mr. R. F. Fitt), whose collection included about 60 species and varieties, mostly raised from seed collected by Mr. Forrest in China in 1912-13. It is too early to tell how they are likely to behave in this country, but some of them appeared to be tender, and will most likely only be grown successfully out-of-doors in favoured parts of these isles. The undermentioned appeared to possess special merit. An unnamed Evodia about 2 feet high with 7 long leaflets set on a red petiole was very pleasing. Gordonia anomala had large, thin, glossy green leaves resembling those of Ficus elastica, but of smaller size. Its white flowers are stated to be 5 inches across, and bear some resemblance to a semi-double Camellia. Cotoneaster glaucophylla, a species of graceful habit, carried a large number of unopened flower buds. Another Cotoneaster named turbinata looked like being a good garden shrub. Neillia rubiflora, with upright, red-barked stems, was very conspicuous; Dichora febrifuga had long, deep-green leaves with serrated edges, which reminded one of Ilex latifolia. Clematis smilacifolia is distinctly ornamental and of free growth. It has opposite, long-pointed green leaves, beautifully mottled, and shaded with glaucous grey. The long, red petioles are effective. Clematis Delavayi and C. chrysocoma were also included. A small-leaved, sturdy-growing Ligustrum named L. coriandrum of fan-shaped habit was suggestive of the growth of a miniature Azara microphylla. Acer X. is very distinct and of free growth, with opposite leaves 10 inches long, lanceolate, serrated, with a reddish mid-rib. The young foliage is bronzy-red. Of Rhododendrons R. oleifolium had foliage similar to but larger than R. racemosum, a dainty Chinese species. R. crassum was remarkable for its long, broad leaves covered with brown tomentum on the undersides. Specimens of R. orotrephes with glaucescent leaves and reddish stems were also noted. A very strong-growing Coriaria named C. nepalensis, with small, light-green leaves, was effective at the back of the group. An unnamed Idesia arrested attention. It had very handsome leaves, similar to but larger than those of the Japanese species I. polycarpa. An unnamed Senecio seemed to come near S. densiflora. It had large, pale-green leaves and white stems. Viburnum ceanthoides, a free-growing species, Eriobotrya prionophylla, Photinia sp. with deep green leaves shaded with bronze, Rosa Forrestii, Celastrus sp., Cotoneaster microphylla var. and an unnamed red-flowered form, and Catalpa Duclouxii were also included in this uncommon exhibit. 2nd, Messrs. Dicksons, Chester, in whose collection were some fairly well-known and rare species. The new bright yellow leaved flowering Currant, Ribes sanguineum aureum Brocklebankii, served as an edging to a group which contained good specimens of the Berberidaceous plant Nandina domestica, remarkable for the rich colouring of its foliage when kept near the glass. Davidia involucrata was represented by small, sturdy specimens, and Daphniphyllum glaucescens was effective. Quercus cuspidata variegata, a Japanese evergreen Oak with cream-variegated leaves, and the large smooth-leaved New Zealand Griselinia lucida macrophylla were noteworthy. Elaeagnus macrophylla, with silvery undersides to its leaves, was effective. Hamamelis mollis, Castanopsis chrysophylla (evergreen golden-leaved Chestnut), Clethra arborea, Berberis Gagnepainii, and B. Wilsonae, Styrax japonica, Viburnum rhytidophyllum, Olearia macrodonta, Mahonia Fortunei, and Juniperus pachyphlaea were also included.

The only exhibit of Ivies came from Mr. L. R. Russell, Tunbridge Wells, who showed a collection of 12 varieties. A splendidly-coloured specimen of Hedera Helix flavescens occupied the centre of the group, and near by was a well-coloured plant of the large-leaved variety H. dentata aurea. The best of the remaining varieties were elegantissima, Lee's Silver and minima.

Mr. L. R. Russell was the only exhibitor in a class for Bamboos occupying a space of 300 square feet. The collection included first-rate specimens of Bambusa tessellata, B. marmorea, B. humilis, Arundinaria nitida, A. anceps, A. Falconeri and A. pumila; Phyllostachys Quilioii, P. nigra, P. violescens and P. castillonis. The next class was for a collection of Maples. The brightest feature in the group was a dozen large plants of Acer Negundo variegata, which largely helped to make up for the seminakedness of many of the forms of Acer palmatum. A groundwork of silver-leaved Euonymus fronted with Echeverias and Scolopendriums completed the arrangement.

For a collection of newly-introduced Chinese plants, including both tender as well as hardy species of Primulas, J. C. Williams, Esq., won the Gold Medal offered as 1st prize. With the exception of two species of Primulas, i.e., P. Pseudo-capitata and P. sinomollis, a prolific flowering species with small purple flowers and a paler eye, nearly all the other specimens were duplicates of those referred to in the class for rare hard or semi-hardy shrubs.

In a class for a collection of cut branches of trees and shrubs in a space not exceeding 200 square feet, there were two entries. The 1st prize was awarded to Mr. L. R. Russell, who had large flowering sprays of Zenobia speciosa and bold masses of Quercus pedunculata atropurpurea (finely coloured), Fagus sylvatica macrophylla purpurea (large-leaved variety), Cornus sibirica Spathii aurea, Ulmus campestris, Dampiera aurea, Cercidophyllum japonicum, Cotoneaster pannosa, Azara microphylla, Elaeagnus macrophylla and Japanese Maples. The other exhibitor was Mr. Robert Woodward, Jun., Arley Castle, Bewdley, who showed Kalmia latifolia, Vaccinium stamineum, Cistus laurifolius, Aesculus parviflora, and Genista virgata.

The last-named exhibitor was awarded 2nd prize for 24 vases of cut sprays of trees and shrubs, distinct, reserved for amateurs. His best specimens were Castanopsis chrysophylla, Sophora tetraptera microphylla, Nothofagus obiqua, Magnolia acuminata, Pittosporum Ralphii, Populus trichocarpa, and the large-leaved Oak, Quercus velutina.

The Rt. Hon. Lord Kenyon, Credington, Whitchurch, won the 1st prize in a class for 18 vases of cut flowering trees and shrubs, distinct (Roses excluded). He showed large masses of beautifully fresh Magnolia parviflora, Styrax japonica, Robinia hispida, Escallonia exoniensis, Buddleia variabilis, Deutzia Fortunei, Hedysarum multijugum, Syringa japonica, Philadelphus purpureus maculatus and Olearia dentata.

The plants exhibited in a class for 12 new Acers in not fewer than 6 varieties were poor Mr. Robert Woodward, Jun., who was the only competitor, was awarded 2nd prize. The best examples were A. longipes, with 3-lobed leaves; A. laxiflorum, a slender-habited species with red-barked stems and small leaves set on long red petioles. The deep-green leaves of A. Oliverianum are deeply lobed, the young ones being of a pleasing shade of brownish red.

In a class for 12 Chinese or newly-introduced hard-wooded trees, distinct (Acers excluded), reserved for amateurs, the 1st prize was awarded to Mr. Robert Woodward, who had Cercis chinensis with large leaves and reddish petioles; Cotoneaster multiflora, a graceful-growing species with reddish-barked twigs, white flowers and dark red fruits; Populus yunnanensis, with rough, square stems; Prunus pleuroptera and P. Puddum tibetica; 2nd, C. C. Rogers, Esq., Stanage Park, Brampton Bryan, whose best specimens were Eucalyptus sp., Cercidophyllum japonicum, Carpinus, Betula and Ligustrum.

Mr. Robert Woodward also won the 1st prize for 12 Chinese or newly-introduced Conifers, distinct, reserved for amateurs. He showed small specimens of Cupressus formosensis from the Island of Formosa, Taxus cuspidata chinensis, Abies Delavayi and A. Taxoniana, two handsome species from Western Szechuan; Picea asperata notabilis, P. a. ponderosa, and Pinus densata; 2nd, C. C. Rogers, Esq., Stanage Park, Brampton Bryan. The last class in the schedule was one for 12 Chinese or newly-introduced Acers and other shrubs, distinct (amateurs only). Here again Mr. Woodward won the 1st prize with Dipelta floribunda, allied to the Honeysuckle, having rosy-pink flowers like a Weigela; Syringa reflexa, introduced from Western Hupeh in 1907; Potentilla Wilsonae, with small white flowers; Acer Davidii, with deep glossy leaves and a red midrib; Cydonia sp. and Sinowilsonia Henryi; 2nd, C. C. Rogers, Esq., Stanage Park, Brampton Bryan.

Honorary Exhibits.

Messrs. Piper and Sons, Bishop's Road, London, occupied one end of the tent with clipped trees and Japanese Maples. (Silver-gilt Medal.)

The King's Acre Nurseries, Hereford, filled a circular space of about 300 square feet with a grand lot of fruit trees in pots, many of them bearing ripe fruit.

Messrs. John Waterer, Sons and Crisp, Bagshot, had a large bed of Kalmias and Rhododendrons relieved with Japanese Maples. Although late for Rhododendrons, many of the specimens carried large flower trusses of good quality. The exhibit was enhanced by the introduction of clipped trees judiciously placed near the group, which was surrounded by a dwarf hedge of English Yews. (Gold Medal.)

Messrs. Dicksons, Chester, exhibited many uncommon trees and shrubs, such as Pittosporum coriaceum, Castanopsis chrysophylla, Daphniphyllum glaucescens variegata, Crinodendron Hookeri, Eugenia australis, Viburnum rhytidophyllum and Nandina domestica, for which a Silver Medal was awarded.

Mr. Robert Woodward sent three plants of Rhamnus Purshiana, from which Cascara sagrada of commerce is made.

AWARD OF MERIT.

Rhododendron The Hon. John Boscawen.—An Award of Merit was given to this plant, which was shown by Messrs. John Waterer, Sons and Crisp, Bagshot, a hardy variety of sturdy habit, with a moderate-sized flower truss of a lovely shade of pink deepening to rose-pink towards the edges of the petals.

BRITISH GARDENERS' ASSOCIATION.

June 27.—The visit of the members of the B.G.A. to Kew Gardens organised by the Watford branch took place on Saturday, June 27. Glorious weather prevailed, and the visit was a great success. A company of fifty-eight members assembled at the main entrance at 3.30 p.m., and were conducted through the gardens by members of the Kew branch.

Obituary.

Joseph Chamberlain, M.P.—The Right Hon. Joseph Chamberlain died, at the age of seventy-eight, at his town residence, 40, Prince's Gardens, on Thursday, July 2. His public career is universally known, his services to his city, to the State and to the Empire are acknowledged, and his place in the roll of honour of British statesmen is assured. But although his name and work bulk so largely in the eyes of his fellow men, Mr. Chamberlain lived by no means only for and in that life. Behind it and withdrawn from the public eye was an intimate home life in which love of gardening and of plants formed a vital part. During his active career he turned from the stress of public affairs to his garden at Highbury. There he found relaxation and enjoyment; he found also yet another outlet in these gardens for the inexhaustible store of his energy. The gardens at Highbury, which have been described on more than one occasion in these pages, lie on high, undulating ground, and from the house, which dominates the estate, fine views are obtained of the surrounding country. Around the house are lawns and flower gardens, kitchen garden, fruit and plant houses; and these are set about with meadows encircled by pleasure grounds (see fig. 16). The undulating ground provided opportunity for the effective massing of Rhododendrons and choice flowering shrubs. Fine old trees, particularly Ash, Oak and Yew, add to the beauty of the estate, and they found a place in Mr. Chamberlain's heart second only to that occupied by the

Orchids which he grew so well. His love of Orchids was seized upon by the popular mind, partly because of the habit which he adopted of wearing one of these flowers in his buttonhole, and partly perhaps because of the use which the caricaturist made of this habit. He grew the handsome species largely, and at one time his collection of Phalaenopsis was remarkably fine; Dendrobiums, Cattleyas and Laelias were always good. In a place of honour in the corridor which led from the conservatory to the Orchid houses was the fine Laelia anceps Chamberlainiana, for which he received an Award of Merit in 1891. Numerous other awards testified to Mr. Chamberlain's skill, and his deep interest in horticulture generally was recognised by his election to the vice-presidency of the Royal Horticultural Society. That his interest in Orchids was discriminating is illustrated by the fact that he rather regretted the naming of Cypripedium Chamberlainianum, on the ground that he was not particularly interested in Cypripediums. That his love for these flowers was extraordinarily great is shown by the fact that of the many presentations made to Mr. and Mrs. Chamberlain during their visit to South Africa, one of the most, if not the most acceptable was a bouquet of Transvaal Orchids presented in Johannesburg during the tour. Mr. Chamberlain's personality expressed itself no less in the subjects of his garden than in the affairs of world politics. A strong man, he had incisive views. These views had to be carried out. It is noteworthy, however, that if, as sometimes happened, the results were unsatisfactory, they were accepted with unfailing geniality and good humour. His love of plants and gardens endured throughout a harassed public life; no less did this love provide a solace in the sad twilight of his later days.

GEORGE CUTHBERT.—We state with regret that, as these pages are being passed for press, the new reaches us of the death, after a short illness, of Mr. George Cuthbert, head of the firm of R. and G. Cuthbert, Southgate Nurseries, Middlesex, in his 75th year. The interment will take place to-day, Saturday, and the funeral service will be held at Christ Church, Southgate, at 2.30 p.m.

W. SANGWIN.—It is with regret that we record the death of Mr. W. Sangwin, for 50 years gardener and steward at Trelissick, Truro, which occurred on the 30th ult., in his 80th year. Some years since Mr. Sangwin retired from active work, being granted a pension from the Davis Gilbert family. He created several of the features of Trelissick, notably the Lily pond, which is situated in a valley leading to one of the creeks noted on the Fal river. He occasionally sent specimens of flowering shrubs to the meetings of the Royal Horticultural Society, being amongst those who first flowered Embothrium coccineum in the open, a plant which has become one of the features in gardens in the south-west. Occasionally since his retirement he visited the old gardens of his labours, and it was a pleasure to note the love he had for things he had planted and tended for so long a time. The funeral took place on the 2nd inst. in the churchyard of St. Feock, overlooking the river Fal, and close to the landscape effect which he helped to produce.

HENRY FOLKES.—We regret to announce the death of Mr. Henry Folkes, at Gaddesden Place, Hemel Hempstead, on the 1st inst., at the age of sixty-seven years. Mr. Folkes was gardener to the Right Hon. T. F. Halsey, at Gaddesden Place, for forty-six years. He was a most successful exhibitor at the leading shows for many years. The funeral took place at Great Gaddesden on the 4th inst.

TRADE NOTE.

MR. D. A. COWAN, for seven years representative of Messrs. Charlesworth and Co., is relinquishing that post on the 13th inst., in order to act in a similar capacity for Messrs. J. and A. McBean, Cooksbridge, with whom he has entered into partnership.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* write the names of persons and places as legibly as possible. *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. Walter E. Pullen, for the past 2½ years Outside Foreman at Horsley Hall, Gresford, Denbighshire, as Gardener to CEDRIC R. BOULT, Esq., The Abbey Manor, West Kirby, Cheshire.

Mr. John Smith, for the past 18 months Gardener to ALEX. STEVENSON, Esq., Colinswell, Burntisland, Fifeshire, and previously Under Gardener to the Right Hon. J. PARKER SMITH, at Jordanhill, Glasgow, as Gardener to CAMPBELL B. HAUSBURG, Esq., Furnace Farm, Cowden, Kent. [Thanks for 1s. for R.G.O.F. box.—EDS.]

Mr. F. W. Miles, for the past 15 months Second Gardener to A. E. CUMBERBATCH, Esq., at Ware Park, Hertfordshire, and previously at Latimer House Gardens, Chesham, Vale Royal Gardens, Northwich, and Kelston Park Gardens, Bath, as Gardener to the same gentleman and at the same place.

Mr. A. E. Moore, for the past three years Gardener to H. O. HOLDER, Esq., J.P., of Waresley House, Hartlebury, Worcestershire, and previously of Moor Green House, Birmingham, as Gardener to HERBERT AUSTIN, Esq., Lickey Grange, near Bromsgrove. [Thanks for 2s. for R.G.O.F. box.—EDS.]

Mr. H. Sinclair, for the past 5 years and 8 months Gardener to Mrs. LEAF. The Lowe, Wellesbourne, Warwick, also The Fosse House, Ettington, S.O A., as Gardener to Mrs. SMITH RYLAND, Barford House, Barford, Warwick. [Thanks for 1s. 6d. for R.G.O.F. box.—EDS.]

THE LATE GEORGE CUTHBERT.

Mr. T. Wilkins, for 12 months Inside Foreman at Duffryn, Cardiff, and previously at Pyt House, Tisbury, Inwood and Dunster Castle, as Gardener to L. E. TRAHERNE, Esq., Coedriglan Park, Cardiff.

Mr. H. C. Martin, for the past 2½ years Foreman at Benham Valence, Newbury, as Gardener to Capt. W. H. STARKEY, Bericote House, Leamington Spa.

Mr. C. Cheese, for nearly 6 years Gardener to W. E. BUCKLEY, Esq., Beech Holme, Colwyn Bay, and previously Gardener for nearly 3 years at Oakfield Claines, near Worcester, and General Foreman for 4 years at Bishton Hall, Stafford, as Gardener to the Hon. Mrs. BRITTEN, Kenswick Manor, near Worcester

Mr. E. Page, for 5 months Second Gardener at Beech Holme, and previously at Adair Place, Englefield Green, Surrey, as Gardener to W. E. BUCKLEY, Esq., Beech Holme, Colwyn Bay.

Mr. T. Allaway, for the past 7½ years Second Gardener at Englefield Lodge, Englefield Green, as Gardener to Mrs. LEISHMAN, The Rookery, Great Marlow. [Thanks for 1s. for R.G.O.F. box.—EDS.]

Mr. C. Hart, for the past 6½ years Gardener at Caldecote Towers, Bushey Heath, as Gardener to the Right Hon. Sir WILLIAM MATHER, P.C., Bramble Hill, Bramshaw, New Forest, Hampshire. [Thanks for 2s. 6d. for R.G.O.F. box.—EDS.]

Mr. George Kiddle, for the past seven years Foreman at Farmleigh, Castleknock, as Gardener to Mrs. BARRON NEWELL, Woodstown, Waterford, Ireland. [Thanks for 1s. for R.G.O.F. box.—ED.]

Mr. Alfred J. Hartless, Gardener at Bishopsgate, Englefield Green, Surrey, as Gardener at Hemsted, Benenden, Kent.

Mr. H. Dew, for five years Gardener to the late General PAKENHAM, and latterly to Colonel PAKENHAM, Langford Lodge, Crumlin, Co. Antrim, as Gardener to C. MITCHELL, Esq., Pallinsburn, Cornhill-on-Tweed. [Thanks for 2s. for R.G.O.F. box.—EDS.]

DEBATING SOCIETIES.

BATH GARDENERS'.—At the meeting of this society, held on the 8th ult., Mr. Harry Basham, of Newport, was unable to be present to read his paper on "Roses," and Mr. J. Wiggins, also of Newport, gave a paper on "The Herbaceous Calceolaria." Mr. H. Sparey explained the circumstances under which Mr. Wiggins had come, and the lecturer was accorded a very hearty reception. Mr. Wiggins pointed out that there were two kinds of Calceolaria—herbaceous and shrubby. Both were suitable for pot culture, and for greenhouse and conservatory decoration, but plants of the former section were most popular for the last-named purpose. The present method was to treat the plants as biennials—raising them from seed one year for flowering the next, and then throwing them away. A point to be remembered in growing these plants was that they were most impatient to heat. Plants raised early in the summer became stunted and a prey to insects. The first or second week in August was the best time at which to sow the seed.

BRISTOL AND DISTRICT GARDENERS'.—The usual monthly meeting of this association was held at St. John's Parish Rooms on the 25th ult. Mr. R. Jennings presided. The appointed lecturer, Mr. Hollingworth, was unable to attend, but Mr. Biggs filled the vacancy, and gave a most entertaining lecture on Kew Gardens.

Answers to Correspondents

APIUM NUDIFLORUM: *Burford*. There appears to be no evidence whatever that this plant is poisonous to cattle. On the Continent the plant is used as a diuretic in lithiasis, as an emmenagogue, and in skin diseases in the form of salad. Dr. Withering mentions the case of a young lady whom he cured of a cutaneous eruption by giving her three large spoonfuls of the juice twice a day mixed with milk, and states that it produced no unpleasant results. Possibly some other plant was mistaken for it. Cicuta virosa, called Cowbane on account of its fatal action on cattle, occurs in the midland and northern counties on the banks of broads and pools and canals, and Oenanthe crocata, an equally fatal plant to cattle, grows on the muddy or pebbly sides of streams and ditches. Either of these would be certainly fatal to cattle. But the leaves of the three plants are quite distinct, and it should be possible to identify the leaves or even portions of them found in the stomach of the animal. The correct name of the plant does not always transpire in newspapers. We remember that the death of some sailors in Cornwall was attributed in a leading local newspaper to Cicuta virosa, which does not occur in Devon or Cornwall, the real cause of death being Oenanthe crocata, a common stream-side plant in both counties, often fringing streams near the sea where sailors would go for fresh water, and where its Parsnip-like roots might tempt them to taste, as it often does cattle when it is thrown out on ditch-banks in clearing the ditches.

APPLE TWIG INFESTED: *O. M.* The small red bodies are the eggs of a mite belonging to the genus Bryobia. Caustic alkali wash is said to be effectual in destroying this pest.

BEANS INJURED: *Y. D.* The Scarlet Runner Beans show signs of having been badly infested with the Bean or Pea Weevil (Bruchus sp.), and the insects were evidently present in the seed when sown. Had the sample of seed been critically examined the presence of the pest could have been detected and the seed destroyed. There is, unfortunately, no remedy, and care should be taken to select sound, healthy seed for sowing.

BEETLE: *Inquis.* The specimen sent for identification had, unfortunately, escaped during transit.

CAULIFLOWERS DISEASED: *A. E.* The roots are in all probability attacked by the maggots of the muscid fly (Anthomyia radicum), which is a troublesome and serious pest. Keep the plants well supplied with water, as it may enable some of them to outgrow the attack. Many remedies have been suggested, but they are rarely effective.

Cedar Tree with an Iron Band Around the Stem: *A. M.* Your letter is not sufficiently explicit. It does not state if the band is around the main trunk or upon a branch. Assuming it to be around the main trunk, the better plan will be to endeavour to cut the iron band in two or more places. Then, if the iron is firmly embedded in the bark do not attempt to remove it, but allow the growth to force the iron outwards by expansion. If the iron band be removed the vacancy should be filled in with cement to prevent any undue movement in the case of high winds. With a sharp chisel it should be quite possible to cut through the iron. A further strengthening of the stem (trunk) could be effected by binding four or more stout pieces of pitch-pine or other stiff wood below and above the injured part. Do this with stout cord and as tightly as possible to prevent any friction. If it be a branch the remedy as to cutting the iron is the same, but then some support should be given from the ground in the way of a prop or props, and, further, two chain supports should be fixed above and below the weak or injured place, so as to relieve the bough of any undue weight, the object being to prevent injury from winds. We shall be interested to know more of this case later, and to give any further advice we can.

Cucumbers Bitter: *F. B.* The bitterness of your Cucumber fruits may be due to one of two causes. Either the plants have become stunted through being kept too dry or too wet at the roots; or, and this is more likely, the plants have become exhausted, and the fruits take unduly long to develop. The best remedy for this state of affairs is to pull up the old plants, fork a dressing of slaked lime into the beds, and cover them with mounds of a rich compost, 2 feet apart. Then plant fresh, young plants, which have been grown in 6-inch pots for the purpose. Or the old plants, if fairly clean, may be retained, but all bad leaves and as many as possible of the old shoots must be removed to make room for new growths. The border should be top-dressed with a mixture of loam and short manure in equal parts, and well watered. A warm, moist atmosphere should be maintained in the house, and the growths kept pinched and thinned.

Grapes Diseased: *J. E. H.* The berries are affected with spot disease, caused by the fungus Gloeosporium ampelophagum. Dredge the vines with flowers of sulphur at intervals of ten days. On the second occasion add a small quantity of quicklime to the sulphur, and increase the quantity on each successive application, but always use a little more sulphur than lime. Next winter, when the vine is resting, drench the rod with a solution of sulphate of iron. Collect and burn all diseased leaves, shoots and fruit.

Grubs in Kitchen Garden: *R. H. B.* Your plants are infested by the common "leather jacket," which is the larval stage of the daddy-long-legs fly. Such attacks as that which you describe often follow when old pasture land is brought under cultivation. By removing the grass you cut off the natural food supply, and thus, by force of circumstances, the grubs are forced to attack the cultivated plants. Numbers may be caught under pieces of fresh turf placed near the infested plants; and by searching the soil near the latter. Had the land been allowed to remain fallow for twelve months the insects would have disappeared.

Insect on Chrysanthemums: *J. R., Hull.* The common ghost swift moth (Hepialis humuli). This insect does not eat the foliage of plants: it would be a physiological impossibility for it to do so as its mouth-organs are formed for sucking. In the larval stage, however, it feeds upon the roots of various plants, and it sometimes causes injury to herbaceous plants.

Melons and Cucumbers: *H. S.* You need have no fear in planting Melons and Cucumbers intended to furnish seeds in the same house. There would be no likelihood of the two plants crossing.

Mulberry: *W. E. T.* The Mulberry, in its normal state, is monoecious—that is, it bears male (staminate) and female (pistillate) flowers separately on one and the same plant. Occasionally, however, trees are found which bear female flowers only (see Master's *Vegetable Teratology*, p. 193). As is the case with many trees and other plants with inconspicuous flowers, the Mulberry is pollinated by wind. In the event of pollen grains failing to reach the stigmas of the female flowers no fertile seed is produced. Whether, however, the Mulberry, like some other plants—e.g., Cucumbers—is able to produce its "fruit" from unfertilised female flowers we are not able to say. Why not try the experiment yourself next year by covering some young female flowers with paper bags and observe the result?

Name of Bee: *B. B.* All the specimens sent are representatives of one species—viz., Osmia rufa. This bee does not collect honey, but stores its cells ("nests") with pollen. It is certainly one of the pollinating species. The female is provided with a sting, but the pain caused by it is only very slight as compared with that of other well-known members of the family.

Name of Carnation: *C. C.* We do not undertake the naming of Carnations or other florists' flowers. Send them to a grower who has means of comparing them with others in his collection.

Name of Insect: *W. Selby.* The specimen you sent is a fine example of the elephant hawk moth (Chaerocampa Elpenor). It is not injurious to plants under cultivation, and it is somewhat local in its distribution and never common.

Names of Plants: *Enquirer.* Albuca Wakefieldii.—*T. A. H. I.* Probably Oxalis hirta; the specimen cannot be identified with certainty in the absence of flowers.—*D. B.* Helxine Soleirolii.—*James P. Reid.* The Cut-leaved Beech [Fagus sylvatica var. heterophylla].—*A. H.* 1, Ceanothus Gloire de Versailles; 2, Escallonia macrantha.—*W. D. A.* Juniperus chinensis. *F. Noble.* 1, Abies Pinsapo; 2, Cupressus Lawsoniana var.; 3, Thuya plicata; 4, Cupressus Lawsoniana; 5, Cupressus Lawsoniana; 6, Cistus laurifolius; 7, Lonicera involucrata; 8, Thuya dolabrata; 9, Picea excelsa.—*A. J.* 1, Adiantum concinnum latum; 2, Adiantum Capillus-veneris Mariesii; 3, Adiantum formosum; 4, Adiantum cuneatum Waltonii; 5, Dolichodeira tubiflora, more often known in gardens as Gesneria and Achimenes tubiflora.—*A. Z.* 1 and 3, forms of Athyrium Filix-foemina; 2, Polytichum angulare depauperatum; 4, Polystichum aculeatum; 5, Polystichum angulare.—*A. B.* 1, Sigmatostalix radicans; 2, Sophronitis cernua; 3, Oncidium candidum; 4, Pleurothallis Scapha; 5, Oncidium barbatum; 6, Masdevallia coccinea.—*W. J. W.* Nuphar advena, native of North America. Figured in *Bot. Mag.*, tab. 684, as Nymphaea advena.

Paeonies Injured: *R. H S.* The flower-buds show marked signs of having been injured by the larvae of an insect of some kind, but as the depredator was not inside the buds the probabilities are that it is a night feeder, and probably the caterpillar of a noctuid moth.

Peaches Infested with Ants: *Ants Deal.* Ants are troublesome to ripe Peaches growing against walls, and the trouble is greatest on walls that need "pointing." It is difficult to destroy them at this season, as they naturally prefer ripe fruit to any bait of a less luscious nature. The Ballikinrain Ant Destroyer is usually an effective remedy, but it should be used with the greatest care as it is a poison. Vaporite pricked into the soil a month ago would have driven them away, and this remedy may be tried another season. Bisulphide of carbon, using a wineglass to 3 or 4 gallons of water, is very effective when poured into their holes, and the holes filled up afterwards. Boiling water may be used in places where there are no tree roots, but the most radical measures of destruction can only be practised before the fruits approach the ripening stage.

Peas and Other Plants Unhealthy: *Constant Reader.* We have examined the Peas, and cannot account for their failure. The Pelargoniums are diseased, being affected with Botrytis; the cuttings were probably already diseased when they were struck. We know of no cure for Silver-leaf, though investigations are being made on the subject. In the case of the Peach tree with pale leaves the best plan will be to prick up the soil and mulch it well to bring the roots to the surface.

Rose with Hard Centre: *H. Corder.* See reply to *F. A. A.* under "Carnations."

Split Stones in Peaches and Nectarines: *F. A. Wakeford.* The trouble may result from one or more causes, and certain varieties are more prone to stone-splitting than others. It may be due to sudden changes in the temperature, or dryness at the roots during the winter months, bad stocks, or planting the roots in unsuitable mediums. As the trees appear healthy and look well, no stimulants appear to be needed. It is possible that the roots have grown too deeply in cold soil, and this may have caused the Nectarine tree to die, but what appears to be the most probable cause is lack of lime. To prevent further trouble the trees should be partially or wholly lifted as soon as the wood is matured, shading the house before commencing the work. It would be advisable to overhaul the inside border at the end of this year, and the outside one the next. Plenty of drainage material must be provided. Fairly strong loam is the most suitable soil, to which should be added a fourth its bulk of road scrapings and at least one-tenth of old mortar rubble with a barrow-load of wood ashes to each cartload of the compost; also a liberal sprinkling of bone-meal. Mix the materials well together, and place the soil in the border, making it firm. Spread out the roots evenly all within the top foot of the border after shortening those that have grown too gross or become damaged; the topmost ones not to be deeper than 2 or 3 inches. The border need not be more than 2 feet deep. Afford a copious watering to settle the soil about the roots, and syringe the trees on fine days, allowing the shading to remain in position until the roots have grown in the new compost. Treat the Cherries in a similar manner, but add more lime-rubble and wood ashes to the compost, also bone-meal. Pay careful attention to the pollination of the fruits, as many varieties of Cherry set badly. If grown indoors an abundance of air is necessary to obtain a good set of fruit; too close confinement or undue forcing is fatal to good results with this fruit.

Weed From a Pond: *H. R.* The weed may be spread over ground that has been cleared of an early crop and dug in as green manure. If you have no fallow ground it may be made into a heap, placing it in layers with soil between and allowed to decay. In the winter it may then be spread over ground that is dug or trenched. Another use to which it might be put is that of mulching crops in the vegetable garden.

Worms on Beans: *J. U.* See reply under heading "Worms on Herbaceous Plants: *H. G. K.*" It is interesting to note that this creature has been observed in such numbers this season.

Worms on Herbaceous Plants: *H. G. K.* The examples sent are "hair worms," Gordius aquaticus. This creature is parasitic on insects, and is perfectly harmless to plant life. It often occurs in numbers after heavy rains.

Worms on Plants: *R. King.* See reply to "Worms on Herbaceous Plants: *H. G. K.*"

Communications Received.—A. P.—E. T.—A. C. D.—E. F.—W. H. W.—W. B.—J. A. C.—Iris—H. S.—J. J. & Son—B. J.—A. T. H.—M. R.—T. S.—J. R.—J. McM.—A. F. G. B.—R. O. W.—S. A.—A. G. B.—F. G.—J. B.—A. M. S.—S. S.—S. B.—W. T.—G. H. J.—W. K.—E. H.—J. C.—D. B A.—J. H. W.—S. S.—E. G.—F. D. & Co.—Pea—W. D. W.—H. G. G.—H. M.—R. H.—G. H.—A. G.—W. J.—O. B.—S. C.—J. C.—C. C.—J. P. & Son—G. W. B.—J. E. D.—J. M. W.—T. T. & Co.—M. W. A.—S. E.—K. S.—E. P. P.—C. H.—W. M.—H. N.—F. B.—H. E.—F. F.—W. F.—H. V. W.—E. H.—I. B. P. E.—W. J.—Sir Frank C.

THE
Gardeners' Chronicle
No. 1,438.—SATURDAY, JULY 18, 1914.

CONTENTS.

Arnold Arboretum, the. 45
Books, notices of—
  Annual of the Rose Society of Ontario .. 57
  Orchid Review, the .. 57
  Submerged Forests .. 54
  Sweet Pea Studies .. 50
Church Army's City gardens 54
Educational gardening.. 50
Fastigiate Robinia, a .. 58
Florists' flowers—
  Perpetual - flowering Carnations 49
Germany, Hops and Potatos in . .. 57
Grape Primavis Muscat 58
Huber, the late Dr. Jacques 57
Irises, notes on—
  The origin of some garden Irises .. 48
Law note—
  American Gooseberry mildew prosecution 63
Leuzea conifera 59
Loch Lomond, proposed public park at .. 58
Market fruit-garden, the 47
Moth, diamond black .. 57
Narcissus Fly, the lesser 58
Narcissus seeding .. 58
Obituary—
  Cuthbert, George .. 63
Orchids, new 57
Poplars, the Black .. 46
Rheum Alexandrae .. 58
Roses, some new.. .. 54
R.H.S. Orchid Show, 1915 54
Seeds, germination of, in the fruit.. 58
Sweet Peas, a conference on.. 61
Societies—
  Elstree Horticultural 63
  Liverpool Hort. .. 62
  Manchester Royal Botanical and Hort. .. 63
  Perpetual-flowering Carnation 61
  Reigate Rose and Sweet Pea 63
  Royal Horticultural .. 59
  Société Française d'Horticulture de Londres 63
  Southampton Hort. .. 61
Vienna centenary exhibition, 1915, horticulture at the 54
Week's work, the—
  Apiary, the 53
  Flower garden, the .. 53
  Fruits under glass .. 52
  Hardy fruit garden, the 53
  Kitchen garden, the .. 52
  Orchid houses, the .. 52
  Plants under glass .. 52
Wheelbarrows, American 58

ILLUSTRATIONS.

Cattleya Warscewiczii 62
Michauxia Tchihatcheffii 59
Populus Henryana, 46; P. serotina 47
Miltonia vexillaria Rev. W. Wilks 61
Roses Augustus Hartmann, 49; Margaret Dickson Hamill, 57; Mrs. Bertram Walker, 51; Waltham Scarlet 55

THE ARNOLD ARBORETUM.

Impressions by the Hon. Vicary Gibbs.

(Concluded from p. 26.)

ONE of the most attractive features of the Arboretum is the part known as Hemlock Hill. This is a bit of pure nature, such as one would never expect to find six miles from a great city. When standing on the hill among the rugged boulders and ferns under the shade of the Hemlock forest one could imagine oneself, were it not for the occasional noises of the adjacent railway, a thousand miles from civilisation. The top and sides of the hill are clothed with the Hemlock (Tsuga canadensis), and a very lovely tree this is when growing in numbers together; a few self-sown White Oaks, Hickories, and American Beeches occur sparsely scattered, but nothing has been done to interfere with or detract from the natural condition of the hill, beyond the making of a few necessary and unobtrusive footpaths. At the foot of the hill runs a brook, and both sides of this are planted with Rhododendron Catawbiense, R. maximum, R. Smirnowii, and many garden varieties. Rather to my surprise, though not to my regret, I was told that R. ponticum, which flourishes so freely with us, will not stand their winter. The effect of the Rhododendrons, as I saw them in beauty just before I left, with the sparkling water and solemn background of the Hemlocks, was quite enchanting. While talking of Rhododendrons, I should like to mention Azalea Vaseyi (see *Gardeners' Chronicle*, May 11, 1912, fig. 155), a most delicate pink, and A. canescens, I think indigenous, as most agreeable, and to me unaccustomed sights; but living as I do on a heavy clay soil I am so ignorant of peat-loving plants that what is an attractive novelty to me may be an everyday affair for other of your readers.

I had left Massachusetts before the Kalmia, or Mountain Laurel as they call it, was in full bloom, and on Long Island, where I was later, I did not come across much of it, but I saw enough in the bud to realise that its glories are not exaggerated. I believe it is one of the very few flowering shrubs which will grow in every State of the American Union, and is therefore appropriate for the national flower.

On entering the Arboretum the first thing to catch the eye is a very complete collection of deciduous Magnolias, and I was lucky enough to see many of them in flower. Of these I think I should give the palm of merit to M. cordata, with its bright yellow, medium-sized blooms, although for foliage I think nothing surpasses the comparatively common M. tripetala.

Naturally I spent a great deal of time in the nurseries in company with old Mr. Dawson, who has been in charge of them for many years, studying the Chinese introductions and the various novelties brought into cultivation by Purdom, Jack and Harbison for the Department of Agriculture at Washington, and others. I should say that as a propagator it would be very difficult, if not impossible, to find Dawson's equal. He showed me some examples of his perfect grafting, including a curiosity, viz., Bignonia radicans worked on a stock of Catalpa speciosa. I mentioned to him the difficulty which we had found at home in propagating those two splendid trees, for which horticulturists owe a debt of gratitude to Wilson, namely, Salix magnifica and Populus lasiocarpa, and he gave me some instructions which I hope will bear fruit this year. That he had not experienced my trouble was proved by my seeing a row of satisfactory young plants of the aforementioned Willow. Dawson was all through the great and terrible Civil War, and can show the Bible with the bullet hole in it which he carried on his breast and to which he owed his life. He has been very successful in hybridising Roses, and Arnoldiana (Général Jacqueminot × R. rugosa) and the one named after himself, of which I forget the parentage, are two happy results of his efforts.

A part of the Arboretum which is an exception to my previous statement, that the natural appearance of the grounds has been so perfectly preserved, is a flat, large lawn surrounded on four sides by a pergola covered with all kinds of creepers (or "vines" as they are called in the States). This lawn is cut up into long, narrow panels about 8ft. wide, of alternate turf and open soil. In the latter are planted a succession of shrubs of all kinds suited for gardens, each row is only one plant deep, and each plant is labelled back and front, so that one can walk between two rows and read the names on both sides of one and select the particular variety of Ribes, Pyrus japonica, Deutzia, Berberis, etc., that one would like to have in one's private garden. Of course, these plants are in duplication of other specimens of the same shrubs which occur in their proper order in other parts of the Arboretum, and there of course have added to them other species which are of botanic rather than gardening interest. This lawn and its enclosing fence are the best arranged things of the kind that I have ever seen for enabling a man who is ignorant of gardening matters, and who has built a new house, to choose the plants which most please his eye to set against it and around it.

I know nothing that flourishes better in the Arboretum than the flowering Crabs, and, indeed, in the Eastern States generally; provided they be protected from ravages of insects, the Apple trees of all kinds thrive wonderfully and attain a far larger average size than they do with us. Of all the Crabs I think the most showy is one little planted at home, viz., Pyrus Malus coronaria flore pleno, or the Bicknell Crab as it is popularly called; its only fault is one which it has in common with the Captain Christie Rose, namely, that instead of shedding its bright large double pink Rose-like blossoms, it retains them in their brown disfiguring state on the tree. Others of the same genus which are not well known and deserve favourable mention are P. M. Sargentii and P. M. Dawsoniana.

Talking of insect ravages reminds me of the great economic loss which Massachusetts and the neighbouring States have sustained by the disease which has attacked the native Chestnut. It is a grand tree, readily recognisable by its resemblance to the Spanish Castanea, and used to grow in abundance to a large size, and gave valuable timber. No remedy has been found to save its life, and it is now almost impossible to find a healthy tree; indeed, in most woods it has had to be cut down wholesale, to save what value was left. It looks as if in a few years it would become extinct, at any rate in the parts which I have visited. Another great curse is the Elm beetle, which attacks the beautiful Ulmus americana, one of the most taking and distinctive trees that I saw during my visit. The typical tree usually has a short, straight stem, which soon separates into three or more, and branches out into a tall, umbrella-like pendulous head. It sometimes attains immense size, the biggest which I saw being in the Highland Park at Rochester, N.Y. This Elm is quite unlike ours, but just as impressive, though in a different way. It seems to have been the favourite in old times to plant in front of a house, and when driving about in the early settled parts I constantly saw old homes with three of these coaeval trees in front of them.

I believe the mischief caused by this beetle can be stopped by spraying, but the expense of this process is prohibitive, except in cities or about the homes of rich men. The beetle also attacks imported Elms, but

I am told that it spares Ulmus fulgens, a tree with which I have no acquaintance.

Ulmus americana will not thrive in England unfortunately, and it is strange how many of the commonest and finest Eastern trees are unable to tolerate our conditions of life. They include the White Oak, the Black Oak, the Chestnut, the Beech, and the Sassafras. I do not mean to say that none of them can be found in England, though I believe that even this can safely be asserted of Quercus alba, but, considering their beauty and that they must have been introduced 200 years ago, the fact that they are practically unknown in our country is proof conclusive that they cannot be naturalised.

Last winter, which we escaped so lightly, was one of the severest ever experienced in North America, and Professor Sargent informed me that out of 1,000 Tree Paeonies, aged eight years, he had lost 750! When I visited the nurseries of the well-known firm of Ellwanger and Barry, in Rochester, I saw many instances of the devastation which 20 or more degrees below zero can cause.

I see that among shrubs which are more largely planted and grow more luxuriously on the other side of the globe, I have omitted the various Guelder Roses, which make a striking feature in American gardens. I can recall some fine plants of Viburnum prunifolium in flower on the edge of a wood, which produced a distant effect comparable to that of old English Whitethorns at their best. The new Chinese Viburnum rhytidophyllum seems barely hardy in the Arboretum, but V. acerifolium, V. lantana, V. dentatum, V. pubescens, and many others flourish exceedingly.

I have said, too, nothing about the Arboretum's Oaks, and I should take up too much of your space if I were to attempt to describe them in detail, but they are a fine thriving lot of surprising size considering their youth. Our pedunculate Oak is, however, I understand, but a short-lived tree of some 80 years' duration when imported, and cannot compare in size or importance with many of its indigenous congeners.

As I have said, our common Yew and Holly cannot stand the Massachusetts winter, though I saw both growing fairly well on Long Island and in Pennsylvania, where the climate is milder. For our Yew, however, Taxus cuspidata is now being planted in large and increasing numbers, and I see no reason, as it is absolutely winter proof, why it should not be generally used for hedges round Rose and other formal gardens, as we do ours, though exactly what height it may attain in North America I am not prepared to say. The only evergreen substitutes for our Holly are the tiny-leaved Japanese Ilex crenata, which I have never seen in fruit, and the indigenous Ilex opaca, which last did not altogether escape injury last winter; although it fruits freely and holds its fruit long (I saw one still covered at Dedham, Mass., about June 1), yet its foliage is dull and ill compares with our cheerful glossy Christmas decoration. Of deciduous Hollies there are several, such as the indigenous I. verticillata, which, though inconspicuous in summer, is fine in berry when the leaf has fallen, but I doubt if it would ever fruit so freely when planted in Great Britain. The Cotoneasters, like most evergreens or sub-evergreens, do but poorly in the Arboretum, but the Barberries, on the other hand, thrive quite as well as with us; indeed, our common Berberis vulgaris has, like our White Willow, become perfectly naturalised, and now grows wild quite a long way inland from the East coast. B. Thunbergii, too, though not yet actually growing wild, is to be seen everywhere, and is often used for forming low garden hedges, an employment for which it is admirably suited, and which we might with advantage imitate if our nurserymen could afford to sell it at a cheap enough price.

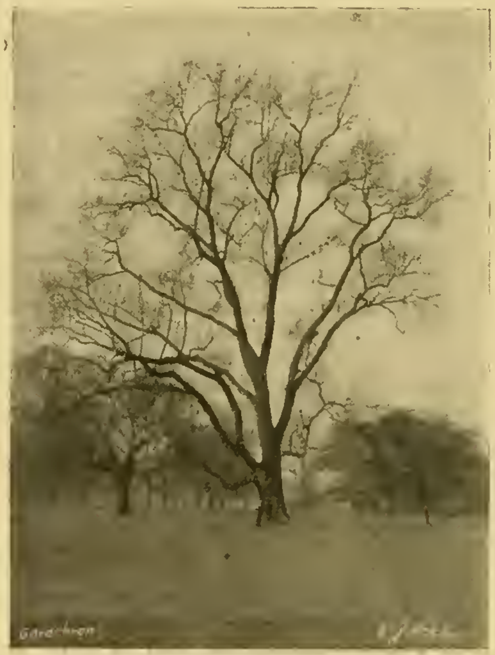


Fig. 17.—Hybrid Populus, P. Henryana, at White Knights.

Owing to the importance of offering protection from the blazing summer sun, street trees are almost universal in the towns and villages of the Eastern States, which gives them an attraction that ours lack, but, on the other hand, the nearly entire absence of any hedge to mark the boundary of garden plots, whether small or big, gives them, to an English eye, a somewhat naked and unfinished appearance. It would seem that that privacy which an Englishman would demand, however humble his homestead, is a matter of indifference or even of dislike to Americans, for one sees them taking their ease, men, women and children, on a Sunday afternoon in front of their houses and in full view of the public street.

Now it is quite time that I should bring this "bald disjointed chat" to an end, but before doing so I wish to apologise for the various errors of statement into which I must have fallen owing to my very superficial acquaintance with the American flora. All I can urge in excuse for writing on a subject of which I know so little is that, having had a most enjoyable visit to the Arboretum, I am anxious to encourage others to follow my example and share my pleasure.

Nowadays the voyage can be undertaken easily, quickly, and luxuriously, and leaving England as I did, May 16, and America June 16, I was able to spend a full week in the Arboretum, see Boston, Harvard, Lexington and Concord, Dedham, Lancaster, Salem,[*] the famed North Shore (or Gold Coast, as it is jocosely nicknamed from the number of wealthy residents in summer-time), and many charming country houses and gardens in the State of Massachusetts, to spend three days in Rochester, N.Y., enjoying its wonderful parks and the Genessee Valley, to give two days to Niagara, the same number to Long Island, one to Philadelphia, one for a trip up and down the grand Hudson River, besides having a considerable time off and on in New York.

I received the kindest welcome not only from Professor Sargent, but from all to whom he was good enough to give me letters of introduction. Finally, I can assure any tree-lover who, like me, should visit the Arboretum, that he will find the director and his staff most ready with every courtesy to further his objects, and put him in the way of seeing things and places of interest, and that his trip will be to him, as it will always be to me, a delightful and treasured recollection. *V. Gibbs, s.s. Kronprincessin Cecilie, June, 1914.*

THE BLACK POPLARS.

(Continued from p. 2.)

3. Populus deltoidea var. missouriensis, Henry [P. angulata var. missouriensis, Henry, in *Trees of Great Britain*, vii. 1811 (1913)].

Leaves similar in shape to those of var. monilifera, but larger, 5 or 6 inches in width and length; both surfaces of the leaf and petiole pubescent, some of the pubescence remaining in summer; basal glands three or four.

This variety occurs in the south and south-eastern parts of the United States, ascending the Mississippi basin from Louisiana to Missouri; also in Georgia.

This large-leaved, more pubescent form is probably the large Poplar referred to by Marshall as growing on the banks of great rivers in Carolina and Florida, but I have seen no specimens from there. If these turn out to be identical, this form may be considered to be typical Populus deltoidea, Marshall.

I have seen no tree of this variety in Europe.

I may now refer to a puzzling species, Populus angulata, Aiton, which has been cultivated in England and France since 1730, always being popularly known as the Carolina Poplar. It was said by Michaux to be common in the two Carolinas and the other southern States, but it has never been recognised as a wild tree in any part of America. It differs remarkably from P. deltoidea in the scales of the flowers, which are small, cucullate or concave, simply dentate and not divided on the margin into long filiform lobes. The flowers, which occur in both sexes, are, however, often malformed, and it is possible that P. angulata is merely one of the forms of P. deltoidea which underwent a mutation in its flowers after cultivation in Europe. In most respects the leaves, which persist green on the tree till late in November, are similar to those of P. deltoidea var. missouriensis, but they tend to be longer than broad, rounded or acute (rarely acuminate) at the apex, deeply cordate or truncate at the base, and are glabrous except for the pubescent petioles.

---

[*] Since this article was written a quarter of this attractive old-world city has been destroyed by fire.

There are a few fine examples of the Carolina Poplar in England, the most remarkable being a very old tree at Danny Park, Sussex, which has layered, producing a great number of stems, and altogether covering an area over 150 yards in circumference. The Carolina Poplar is more suitable, however, for the climate of the south of France and of northern Italy, where it is common in avenues and in plantations.

Hybrid Poplars.—The Black Poplars which are extensively cultivated for timber in France and Belgium, and also in England, are almost invariably of hybrid origin. This fact is easily established from their history and from a study of their botanical characters. With the introduction at the end of the seventeenth century of American trees into Europe, hybrids between them and the allied European species soon began to appear as natural seedlings in nurseries, and in no genus are they so readily produced as in Populus, where individuals occur in two sexes. Moreover, hybrid seedlings are early noticed as endowed with exceptional vigour, and the propagation of any vigorous seedling Poplar by cuttings is so easy that it was often done. I have given elsewhere* the history of the different hybrids, and I need only now indicate the characters by which they differ from the parents, which are, on the one hand, the glabrous or the pubescent European Black Poplar, and, on the other, Populus deltoidea. The hybrids have leaves intermediate in shape, never shallowly cordate at the base as in P. deltoidea and never cuneate as in P. nigra; cilia on the margin sparse and irregular; basal glands variable on the leaves of the same branch, absent or one or two, never consistently present as in P. deltoidea, nor always absent as in P. nigra.

The principal hybrid Black Poplars are:—

1. Populus serotina, Hartig (1851), otherwise Populus helvetica, Poederlé (1792). This, which is a male tree, is always known in England as the Black Italian Poplar, and in France as Peuplier suisse or (erroneously) Peuplier de Virginie. It appears to have been the earliest hybrid Poplar to be selected, being described by Duhamel in 1755, and introduced into England before 1787. It has glabrous twigs and leaves, and is the latest of all the Poplars in unfolding its leaves, which in the young state have a fine bronzy tint. The tree has a characteristic habit and can be readily distinguished in the landscape, even a mile off, by its ascending branches and wide head, as is well shown in fig. 18, which represents a tree at Belton, near Grantham, about 125 feet in height and 15 feet in girth at 5 feet from the ground. Mr. A. B. Jackson records one at Albury as 150 feet in height. The remarkable fast growth of this valuable Poplar is evidenced by a tree, exactly 100 years old, which was felled at Cassio Bridge, near Watford, in 1907. It was 130 feet in height, and 16 feet 11 inches round the trunk at 5 feet up, the contents of the butt being 701 cubic feet, and of the timber of the whole tree about 1,000 cubic feet.

2. Populus regenerata, Schneider. This is a female tree, exactly resembling the Black Italian Poplar in twigs and leaves, but the latter open at least a fortnight earlier. In height this is narrower in outline. Most of the so-called Eucalyptus Poplars are really this hybrid, which appears to have been picked up as a seedling in a nursery near Paris in 1814. In France it is now more common and grows faster than P. serotina, and at Pontvallain has attained in 22 years from the planting of the set 110 feet in height and 6 feet to 6 feet 10 inches in girth. At Culford a plantation of these trees, 14 years old, average 55 feet in height.

3. Populus Eugenei, Simon-Louis. This is a male tree, with twigs and leaves similar to those of P. serotina, but the leaves are smaller and open earlier, and in habit it is distinctly narrower than the Black Italian Poplar. It was found in 1832 as a chance seedling in a bed of Silver Firs in the nursery of Simon-Louis, near Metz. The only female Poplar then existing in this nursery was P. regenerata, which was very probably fertilised by the pollen of a Lombardy Poplar near by, these two Poplars being evidently the parents of this remarkable hybrid. The original tree is, in my opinion, the most wonderful tree in Europe in point of vigour, as it measured in 1913, when 81 years old, no less than 150 feet in height and 25 feet in girth at 5 feet above the ground, and appears to be still growing rapidly. Another tree, a cutting of the last, planted in 1870, was 140 feet high by 15 feet in girth. P. Eugenei thrives in sandy soil at Kew, where, of eight trees 24 years planted, the two largest, in 1912, measured 90 feet by 5 feet 1 inch and 84 feet by 4 feet 5 inches, whilst the others ranged from 50 to 60 feet in height and 2 feet 4 inches to 3 feet 5 inches in girth. All preserve the narrow pyramidal form.

4. Populus Henryana, Dode (see fig. 17), is one of the hybrids with a branching habit, recalling that of P. monilifera. It is a staminate tree, with leaves cuneate at the broad base. It is very rare, and is probably of no particular vigour, but forms a picturesque tree when old, as shown in the illustration, which represents a fine specimen at White Knights, about 100 feet in height and 14 feet in girth. The origin of this hybrid is unknown. *A. Henry.*

(*To be concluded.*)

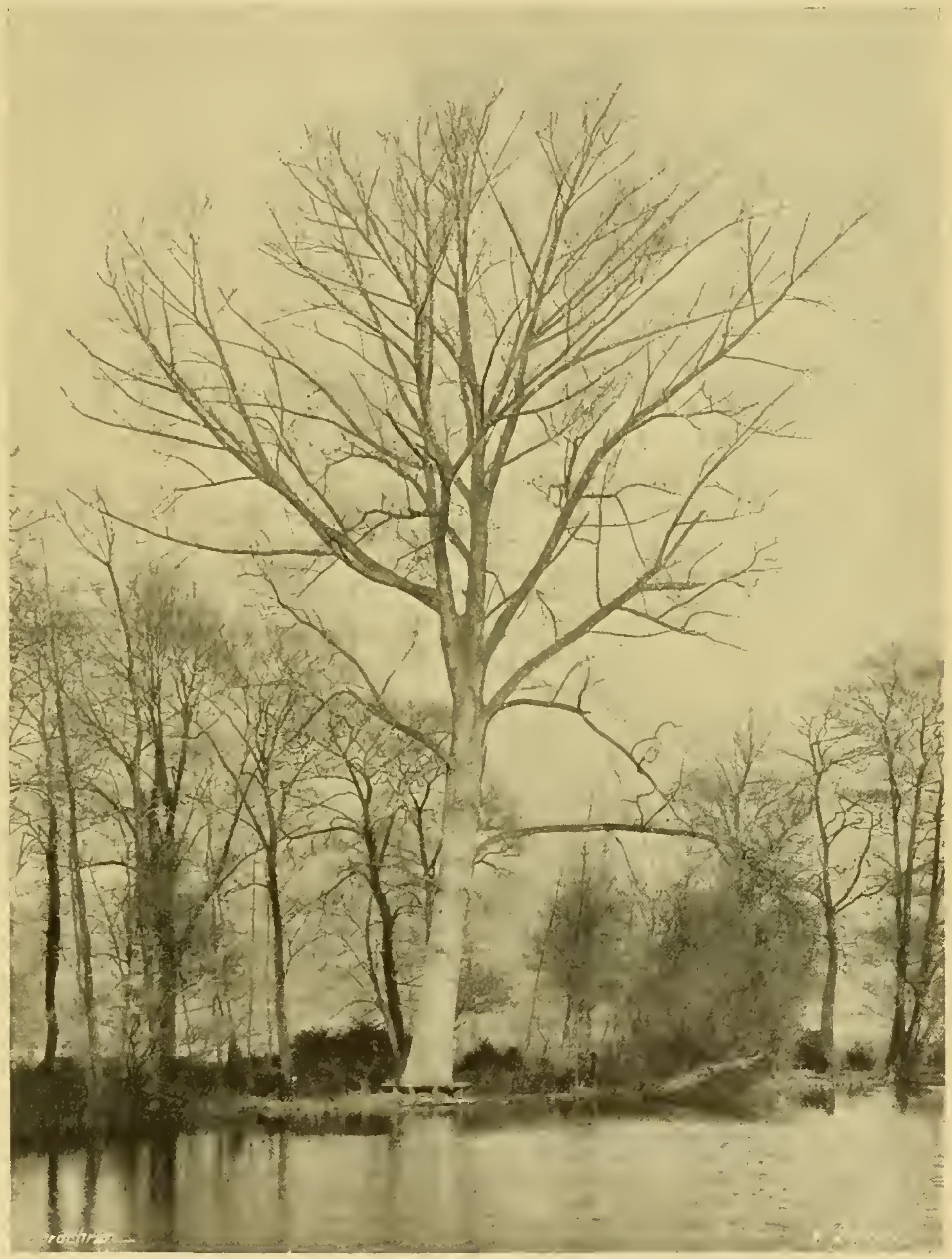


Fig. 18.—Black Italian Poplar, Populus serotina, at Belton.

THE MARKET FRUIT GARDEN.

A partial drought nearly twelve weeks in duration up to the early hours of July 3 is a very uncommon occurrence, at least where the relief from rain was as slight as it has been at my own place. During that period my rainfall was only 1.75 in., or about one-fourth of the average. From April 11 to the end of the month the measurement was only 0.01 in.; for May, 0.67 in.; for June, 1.06 in.; and for the first two days of July, 0.01 in. Under such circumstances the most wonderful result has been the comparative success with which fruit trees have withstood the trial of severe drought. The foliage of Apples is of exceptional vigour and good colour where no serious aphis attack has occurred, while the fruit is larger than usual for the stage of development. From some varieties there has been more dropping of fruit of a size ranging from that of a nutmeg to that of a large walnut; but to a great extent this has been only a salutary thinning, leaving fine singles or doubles to a truss. Plum foliage has not withstood the trial so well; but this is partly because of an attack of the mealy Plum aphis. As to fruit, Plums, like Apples, have thinned themselves to a considerable extent, though not, on the whole, more than was desirable. As stated last month, Gooseberries were badly dwarfed by the drought; but Black Currants were much less affected than they seemed likely to be. The latter did not reach the full size attained last year, but yet made a very good sample. Moreover, they were firmer when fully ripe than they would have been in a rainy season, and this was a point of great importance in a case of 27 acres being nearly all ripe at the same time. The worst result of the drought in my case was the impossibility of cultivating and hoeing the orchards properly. Where the horse cultivator could be worked, it left the land in great clods, and where it could not be used, weeds could only be chopped up with heavy hoes, no fine tilth being possible.

---

* *Trees of Great Britain*, VII., 1814 (1913).

Apple Sawfly.

In further reference to the dropping of Apples, it has to be stated that it was largely due to the maggots of the Apple sawfly. Never before have I seen these pests so numerous as they are this season. No insect pest is worse to encounter. Entomologists tell us that spraying against the maggots is useless, and that the only course to adopt is that of picking the infested fruit off the trees or the ground and burning it. So far as thinning was done, this course was adopted, but not elsewhere. To get off all the maggoty Apples from thousands of trees before these damaged fruits dropped to the ground was quite impracticable, and to collect the dropped fruit was equally so. The best staff to employ for the purpose would be a dual one of pigs and poultry, the former to devour the Apples containing maggots, and the latter to eat the maggots that dropped from the fruit. But neither can be employed where either Gooseberries or Currants grow among the trees, at least until the bush fruit has been gathered; and it is doubtful whether pigs could be safely put into orchards containing bottom fruit at any time. Digging the orchards in the autumn or winter is feasible, however, and this must go far towards burying the maggots too deeply to allow of their survival. Mr. Theobald states that they do not pupate till the spring.

Apple Blossom Weevil.

This is another formidable Apple pest (see *Gardeners' Chronicle*, October 21, 1905, fig. 116), for which no remedial or preventive measures that can be carried on in extensive orchards have yet been devised. In one of the orchards visited at Wisbech an immense amount of damage had been done by the larvae of this weevil, little white maggots which destroy the several parts of Apple blossoms, rendering them useless. The attacked blossoms are described as "capped." In one of my orchards there are still on the trees of one variety particularly many trusses of these "capped" blossoms.

Capsidae.

Growers of Apples when searching for Apple suckers can hardly have failed to notice among the trusses of blossom some active little yellow bugs. But for their activity they might be mistaken by a casual observer for suckers, though they differ from these pests in shape. They are members of the Capsidae family, and are known by those who are familiar with them as capsid bugs. They are responsible for the surface furrowing and other disfiguration of Apple fruitlets, which all growers where they are common must have observed, often without knowing the cause, as very little attention has been given to these insects by entomologists in books relating to fruit pests. In some districts they impair, if they do not destroy, the value of great quantities of Apples. It is said that they are more difficult to kill than suckers or aphidae; but I have found that a strong soft-soap wash kills those which are dipped in it.

Reversion.

Is not the reversion of certain cultivated fruits more common than it was formerly? Wherever visits have been paid to fruit farms on which Black Currants are grown, more or less reversion towards the wild state has been found usual. In the case of the Raspberry also this serious deterioration is common. The Superlative variety, some growers say, is worn out; but there are other varieties which are much worse in reverting and producing mere abortions of fruit. Just as varieties of Potatos deteriorate through being propagated again and again by tubers, so Raspberries raised from suckers and Currants from cuttings fall back from their early excellence. Less strikingly there is the like tendency among varieties of fruit propagated by grafting or budding. It appears that new stocks from seed need to be constantly raised to replace deteriorated varieties.

A Remarkable Exemption.

One of the most striking peculiarities of the present season in my orchards is the complete absence of the black aphis, which has attacked my Boskoop Giant Black Currants in previous years. Invariably before, thousands of terminal bunches of leaves have been bent over umbrella fashion (not curled, as by the common aphis) by the attack of the pest upon the tops of the stems, not upon the leaves. As seen under a lens, these insects are olive-green in colour, though they appear as black to the naked eye. I have never seen the variety elsewhere; nor have I been able to get it identified. Every season before the present one it has been necessary to have the deformed terminals dipped in an insecticide, sometimes going over the plantation twice in the summer. This season, however, there is a complete exemption from the pest, which is very remarkable and quite unaccountable. There must have been something peculiar in climatic conditions in my orchards fatal to aphides, as there was almost complete exemption from the usual early attack of the leaf-curling variety on Apples and Plums, though a slight later attack took place, and a bad one of the mealy Plum aphis has been recently developed.

Permanent Results of Bud-Eating.

The great importance of spraying Plum trees with lime-sulphur immediately after the beginning of bud-eating by birds is noticed, and repeating the operation if rain washes the stuff off, is emphasised by the fact that the damage done is never reparable. As a rule, no new bud is ever developed where one has been eaten off, and consequently shoots rendered bald by birds usually remain so for all future time. Buds grow on extension growth or side shoots, of course, but never as a rule on the portions of the tree once denuded of buds. Three years ago a bud-eating attack became serious on my Monarch Plums next to hedges and shelter trees before it was noticed, and in the two following seasons those trees were almost entirely fruitless. This year there is a small crop on wood grown since the attack took place; but long portions of the branches remain bald. The proper plan is to cut back below the bud-denuded portions of shoots, notwithstanding the fresh growths at the ends. But the Monarch, Greengage, or Golden Drop variety should never be planted alongside of a hedge or row of shelter trees, as these kinds are favourites with birds. The Victoria or Pershore Plum is rarely, if ever, attacked, so far as my experience shows.

Prices of Black Currants.

Up to the time of writing these prices have been disappointing, in view of the generally short crop of Black Currants, though mine was the best I have ever grown. At first a glut of supplies from France and Belgium kept prices comparatively low, and later the hot weather and the consequent bad condition of large portions of the home supply had a like effect. A very small proportion of the crop has made more than 6s. per half-sieve of 24 lbs., with rail and market expenses to come off; and large quantities have been sold at 5s. *A Southern Grower.*

NOTES ON IRISES.

THE ORIGIN OF SOME GARDEN IRISES.

About two years ago I was able, by the kindness of the Hon. N. C. Rothschild and of Dr. A. v. Degen, of Budapest, to see a dried specimen of an Iris which had been discovered on the Velebit Range, in Dalmatia. This was recorded in a paper on the local vegetation by Dr. Degen* as being related rather to I. chamaeiris Bert and to the I. lutescens Lamarck than to I. variegata L. The branching stem and the wholly herbaceous spathes showed that it had nothing to do with the French I. Chamaeiris or lutescens, while the fact that the outer edges of the spathe valves were not keeled was sufficient evidence that the Iris was not merely a form of the Balkan I. Reichenbachii.

In April, 1913, I went to Dalmatia in search of Irises, and by the kindness of the late Herr Dobiasch, of Zengg, in Croatia, was provided with a native guide to take me to the exact spot on the Velebit Range where this Iris was known to grow. The mountains rise very abruptly from the sea coast and consist of very rough and almost barren limestone. In former days, when this coast was subject to Venice, tribute appears to have been paid in timber, with the result that the hills were almost entirely denuded of trees, and it is only recently that, further north in the neighbourhood of Fiume, attempts have been made towards reafforestation on any large scale.

The Iris, of which I was in search, grows in a shallow cup-shaped hollow near the summit, at a height of some 4,000 feet. Just before we reached the edge of the cup, and while we were still on the south-western slope facing the Adriatic, I found growing among the limestone rocks a few Iris leaves, together with Crocuses and Muscari. My guide urged that it was hardly worth while to stop to collect any of these plants because we had almost reached our destination, where it was far more abundant. However, I took up a few plants, and then we soon reached the top. In this depression patches of snow were still lying on the north side of rocks, and all around were Gentiana tergestina, a near relative if not a form of G. verna; Crocuses, of a species as yet undetermined; a yellow-flowered Primula; and, coming up among them all, the young leaves of an Iris, obviously belonging to the bearded section. The soil of the hollow was a layer of black vegetable mould overlying the limestone below.

During the present year the plants which I brought away with me have flowered well. It was interesting to watch them develop as they grew side by side. The foliage of the plants from the south-west face was noticeably glaucous and the entirely scarious spathes pointed to I. pallida. When the flowers opened it was obvious that here was one more of the long series of plants which in the north, near Roveredo, are called I. Cengialtii and in the south I. illyrica.

The plants from the hollow at the top had much greener foliage and were evidently of two kinds, for the spathes were in one case wholly green and in the other scarious in the upper part and green at the base. In both cases the stems branched and the slightly-ribbed foliage of the plants with wholly green spathes led me to conclude that Dr. Degen's Iris must be a form of I. variegata L., which is common in many parts of Hungary. This was what they eventually proved to be. The standards are of a clear, pale yellow and the red-purple veining on the falls is not heavy, and I have no doubt that the veins had wholly disappeared in the drying of the original herbarium specimens. The behaviour of Iris flowers as they dry is very erratic. Some keep their colours to an astonishing degree, while others, the yellows especially, rapidly lose all traces of their original hue and become merely a light brown.

---

* *Magyar Botanikai Lapok*, 1905, p. 251.

It was sufficiently surprising to find I. pallida and I. variegata growing together, but a still greater surprise was the third variety of Iris, which had partly scarious and partly green spathes. The four-flowered inflorescence was that of a small I. germanica, and only the slightly brownish tinge of purple in the buds showed that there was any difference. When the flowers eventually unfolded they were at once interesting and disappointing. They were interesting from the fact that they were evidence that the so-called squalens and sambucina are, as I had long supposed, hybrids of I. pallida and I. variegata; and disappointing because they proved to be only an Iris which we have long had in our gardens, but which is no great ornament to them.

In the standards the yellow and the purple of the two parents fight for the mastery, and produce that dingy shade of dull purple which fully justifies the name of squalens. The falls are of a pale reddish-purple with thick darker veins, which allow the whitish ground to show between them only near the end of the beard. This is composed of whitish hairs tipped with yellow, and the flowers are, in fact, a typical I. squalens.

All the plants I have described are naturally small, growing as they do in poor soil at a considerable elevation, but I have no doubt that they will develop under better conditions to more than the 15 or 18 inches to which they have attained in this dry year in poor, stony soil.

The discovery of these three plants, the squalens hybrid and its two parents, pallida and variegata, growing together in a locality which certainly was never inhabited, and where they could scarcely have been planted by the hand of man, goes far to explain the origin of many of our garden bearded Irises. I have a whole series of hybrid forms, coming chiefly from the neighbourhood of Bozen and Riva, in the Southern Tyrol, in some of which the yellow of variegata predominates, while in others the purple of the pallida is more apparent. Judging from the localities from which they come, I never felt confident that they might be described as natural hybrids between I. pallida and I. variegata, but after my experience in Dalmatia I am inclined to think that it is extremely probable that they are really wild plants.

Typical I. variegata, such as we know it from Hungary and the Balkans, is not now known to grow at Bozen; but, at any rate, there grows near that place a plant which closely resembles I. variegata, though certain characteristics and the fact that it does not readily set seeds incline me to think that it is a hybrid and not merely a form of that species. In the same neighbourhood forms of I. pallida are also abundant, and I have now little doubt that the original parents of the many so-called "German" Irises of our gardens are to be sought among these plants.

Whether the problem of the origin of Iris germanica itself will ever be solved is doubtful, but I am almost inclined to suggest that it may be of hybrid origin. This would explain many of the difficulties, its almost complete sterility, the frequent malformation of the flowers, and the fact that it has never been found wild. The chief difficulty that is not explained lies in I. germanica's habit of beginning to grow in autumn instead of waiting for spring. If it were not for this there would seem to be no reason why I. germanica should not have resulted from a cross between I. aphylla and I. pallida. The flowers of the latter especially are so variable in their shades of colour that the many varying colour forms of I. germanica could easily be produced and the wholly herbaceous, often purple-flushed spathes of I. aphylla would combine with the wholly scarious spathes of I. pallida to give us the partly scarious and partly herbaceous, often purple-flushed spathes of I. germanica.

These suggestions are only put forward tentatively, but it would be interesting to know whether any seedlings have already been obtained by crossing I. aphylla and I. pallida, or any other tall, bearded Irises. I have made the cross recently and hope to obtain seeds which may throw more light on the vexed question of the origin of our garden bearded Irises. *W. R. Dykes, Charterhouse, Godalming.*

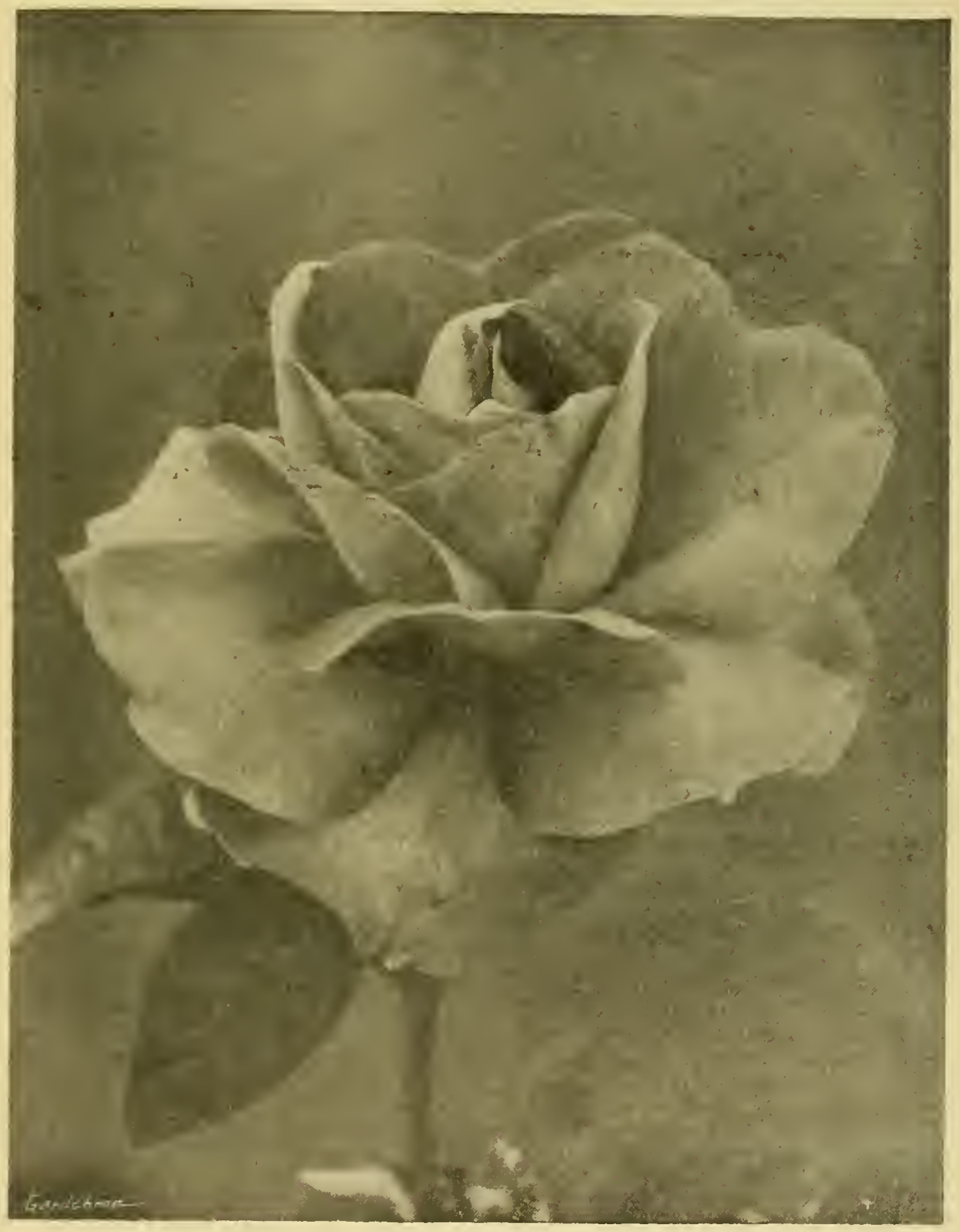


Fig. 19.—Rose Augustus Hartmann; H.T.; colour, cerise-pink.
(See p. 54.)

FLORISTS' FLOWERS.

PERPETUAL-FLOWERING CARNATIONS.

A writer recently stated that while nurserymen grew their Carnations planted out, they instructed others not to plant them, and he naturally asked the reason why their recommendation is at variance with their practice.

Those who grow Carnations in beds commercially have large, airy houses, specially designed for the purpose, covering a quarter of an acre or so, and holding some 10,000 plants. The flow pipes are overhead, thus ensuring a dry atmosphere, and permitting of an abundance of ventilation on suitable days. Thus the atmosphere is always fresh and buoyant, whilst it scarcely matters how far the plants are from the glass, because it is almost as light inside the house as out. The benches are narrow and some 2 feet from the ground.

Compare such conditions with those of the small house at the command of the average gardener. The temperature in a small house is more influenced by external conditions than is that of a larger one, also the ventilation is not so easily controlled. Thus it is seen that the nurseryman, with his large houses, has the advantage, and while Perpetual Carnations can be grown with good success planted out in a small house, better results are usually obtained from pot plants, unless the gardener is well experienced in the other method.

In gardens situated in smoky areas, such as near to large towns, or where the greenhouses do not admit the maximum amount of light, to attempt to grow Perpetual-Flowering Carnations planted out is to court failure. Plenty of sunlight is essential to promote a vigorous growth.

Other important details are (1) not to have a greater depth of soil than 4 inches, (2) never to use leaf-mould or similar materials that might cause the soil to become sour, (3) to plant early propagated cuttings not later than June, or the plants will not be sufficiently established to produce the best results.

Pot plants will give finer flowers up to Christmas, and the house will be at liberty for a summer crop; it must also be remembered that many of the British varieties would prove unprofitable planted out, producing an abundance of growth and few flowers.

In many nurseries solid benches are favoured, but the position of the house must be dry to allow of the use of these, also adequate drainage is important. Better results are obtained from plants grown upon benches than those grown in solid beds, particularly in the winter. *A.*

HARDY FLOWER BORDER.

LEUZEA CONIFERA.

Except in botanic collections this old garden plant is now rarely met with. It was introduced to this country in 1683, and is described in Nicholson's *Dictionary of Gardening* as an interesting and pretty plant. There are three species, but L. conifera is probably the only one in cultivation.

It is a long-lived perennial. In a Banffshire garden known to the writer a large group has survived for nearly half a century. L. conifera is an attractive plant when in flower. The scaly flower-heads are here, in the South, of a pale lilac shade of pink, and are even more pleasing than those borne by the plants in the Northern garden alluded to, which are much deeper in colour, and might be termed purple. It is, however, in the early stages of growth that I prefer to watch the plant. The new foliage unfolds Fern-like, and is almost white, gradually changing to pale green, the underside remaining white throughout. The leaves measure about 8 inches in length, and the plant when in flower rarely reaches 1 foot in height. As a front plant for the border or as a specimen on the rock garden L. conifera is to be highly recommended, and the stock can be increased by division and seeds. It is a South European species. *T. Hay, Greenwich Park, London*

EDUCATIONAL GARDENING.

SCHOOL GARDENING AND PUPILS' GARDEN PLOTS.

(*Concluded from Vol. LV., p. 396.*)

The experiments which have been described gave rise to others, mostly in the United States, but also in England and Switzerland. In 1904 already there were in Philadelphia the extensive schoolboy gardens with 250 large single beds and 40 extra big beds, in which the more important of the useful plants were cultivated. The boys and girls of the higher classes of the elementary schools work here from May 15 to the end of June, and from the beginning of September to about the middle of October every afternoon from four to six. On Saturdays, when there is no school, teachers and pupils work in the garden from morning to evening. In Berne Dr. Zahler has allotted beds to 168 pupils, and he reports that scholars who were very weak in theoretic subjects distinguished themselves in the garden by dexterity, diligence and ability. "The garden thus taught us very forcibly that talents are often more equally distributed than we are always willing to believe; one has talent in one direction and another in another, and it is of no rare occurrence that the unrecognised talent stands the test in the struggle for life better than the extolled one. There was another good side to the garden from an educational point of view; it taught appreciation of the value of work—not only one's own work, but that of others. It taught the amount of trouble and care needed to rear plants, and the latter consequently gained value in the children's eyes. One is quite involuntarily educated to treat carefully what belongs to others."

Mention must be made of the school children's garden experiment in Breslau with its excellent results. of which Herr Schmidt gives an exhaustive description. In the spring of 1900 a municipal plot of 1,000 square metres was rendered arable by 70 pupils of the elementary schools, to each of whom was then allotted a numbered bed. Other plots of land were soon added, and in the school year 1902-03 there were already 556 pupils from 35 municipal elementary schools at work on four plots. A rich inhabitant of Breslau had contributed 15.000 marks (about £750) for the acquisition of the land. In 1909-10 the number of gardens had risen to seven of 36,812 square metres, and the number of children working in them—exclusively boys, unfortunately—was 2,306 from 67 schools, in spite of which the town's expenditure did not amount to more than 6,773 marks (about £330). Splendid educational results have been the outcome of the arrangement. All that the boys produce in the way of flowers, vegetables and fruit is their own absolute property. A further extension of school children's gardens in Breslau is assured. Since 1907 the municipal authorities of Zempelburg, in West Prussia, give to scholars garden beds each of 35 square metres (38½ square yards) for their own individual cultivation. The children have full control and may keep the produce, but they must do the whole work alone and may only seek help from grown-ups in the way of advice, though they may render each other every assistance.

Other German towns have in the meantime followed suit. A valuable and much imitated kind of pedagogic garden cultivation for children was instituted in the United States by a large manufacturer—Mr. Patterson, the manager of the well-known National Cash Register Factory (N.C.R.), in Dayton, Ohio, who met with great success in his interesting experiment of transforming the bare and dreary surroundings of the factory into a little paradise. When he saw in what a short time and with what simple means the art of gardening had transformed his bare and dreary factory, he thought of subjecting his workmen's dwellings to a like transformation. But how was he to arouse interest? He had the necessary materials sent from Professor Bailey, in Cornell, and Miss Helen Gould, who was interested in the plan, and Mr. Simons placed photographs of their beautiful gardens at his disposal. He had suitable lantern slides made and began his educational efforts in the factory Sunday school, where he exhibited the pictures to the scholars during the winter. When spring came he distributed 12,000 packets of flower seeds among the children, and as an encouragement established prizes for the most ornamental planting in the gardens and the most artistic arrangements of vines and other creepers round balconies, buildings, window-frames, etc. Boys and girls under sixteen were invited to enter into competition for the best laid-out and best kept back gardens, in which vegetables, fruit or flowers might be planted according to inclination and taste. Five prizes of five dollars each were offered for the most effective window flower-boxes, and four prizes of ten dollars each for the best-kept kitchen gardens. Mr. Patterson charged a capable gardener with the supervision, and to him the competitors were free to go for advice.

Four thousand persons were present at the prize-giving in the fine courtyards of the factory. Nowadays the annual prize-giving is the favourite festival of the people of the neighbourhood, and thousands come to it. The factory that the workmen used to call Patterson's Purgatory is to-day proudly named Patterson's Paradise by them.

Besides this, in order to counteract the bad influence that a number of neglected children were beginning to exercise upon the rest, Mr. Patterson bought a piece of land and gave each of the bad boys an allotment with the necessary seeds and gardening tools, as well as the right to do as they pleased with the produce. Gardening hours are from seven to nine in the morning, and from four to six in the afternoon. From time to time prizes of from 2½ to 5 dollars are awarded, and the one who carries off the first prize also gets a bronze medal. On the day of the distribution of prizes the victorious ones are the guests of Mr. Patterson, when he generally entertains about 80 boys. Each boy possesses his little garden for two years, when he receives a diploma stating that he has been trained in the "Garden Society" of the firm and has proved himself trustworthy.

The firm spends yearly about 3,500 dollars on implements, seeds, instruction and land, and they consider this small sum the best investment they have ever made.

With regard to gardening for boys, apart from the Dayton pattern, good examples are supplied by the Natural Food Company, in Niagara; the N. O. Nelson Company in Leclaire, near St. Louis; the Cadbury Trust, at Bournville; and Messrs. Rowntree, of York. These firms give each boy—whether he works in the factory or is only the son of an employee—a bed, together with seeds, implements, and gardening instruction. Prizes are distributed for the best methods and results. Girls' beds are only to be found in Bournville so far as I know, and here a yearly rent of 1s. is charged for each bed. Everywhere the proceeds from the sale of the produce belongs to the owners of the beds. The Dayton boys' gardens are still the best organised and most comprehensive. In 1903 the produce amounted to only five tons and the next year it rose to eight, as many of the boys were then doing their second year's course. In 1903 fifty or sixty boys had to be excluded from the cultivation of their beds for reasons of discipline, but the number sank to fifteen in 1904 and in 1906 to nought—clear proof of the educational value of the arrangement, which should, therefore, be given consideration by all friends of the young. *Leopold Katscher.*

NOTICES OF BOOKS.

SWEET PEA STUDIES.—IV.*

This is the fourth, and much the largest Bulletin dealing with Sweet Peas issued by Cornell University College of Agriculture—Department of Horticulture. Mr. Alvin C. Beal is responsible, and the work has been carried on continuously since 1909. The investigation was begun, to use the words of the preface to No. 3 of the studies: "With a view of studying the various species of Lathyrus for the purpose of monographing them, and particularly of determining their value as ornamental plants. The studies on Sweet Peas included the evolution of the flower, as well as the preparation of careful descriptions and the detection and elimination of synonyms among present-day varieties. The descriptions of the garden varieties will appear in a later publication; those of winter-flowering varieties are included in Bulletin 319 of this station."

The Bulletin now before us does what was promised—gives the descriptions of over 600 varieties, and to show the method by which the work has been carried out it will be best to quote one description in entirety, and for that purpose the first in the waved section is taken.

---

* *Bulletin IV., Department of Horticulture, Cornell University, U.S.A.*

"APPLE BLOSSOM SPENCER.

"Originated by ——

"Introduced by Burpee, 1908.

"Donated by Burpee, Morse, 1910.

"Description in brief: Large to very large, waved, rose bicolor; garden, market, or exhibition variety.

"Description in detail: Colour of standard lilac-rose 152 (4), wings violet-rose 154 (1-2), on a faint primrose ground. Standard large, much waved; wings very large, waved. Flowers two to four, on long, very stout stems. Fragrant. Bloom profuse and continuous. Sunproof. Plant of medium height and stout, healthy growth

"Comparison: A misnomer, for it is not like Apple blossom. It should be called Jeannie Gordon Spencer, as the ground tint is primrose.

Remarks: Introducer's stock pure in 1910."

The descriptions bear evidence, we think, of being the work of different individuals, as some are more thorough and complete than others. In some the colour of tendrils is given and the colour of the seed, in others these particulars are omitted. We are glad to notice that fragrance is a quality noted in many. The courage required to state which stocks were pure seems to be lacking in America as it is at home. For example, stocks are sent in by Boddington, Cole, Dobbie, Henderson, Morse, and Rawson of one variety (Countess Spencer), and the remark is made "one stock pure." Then in the case of another (John Ingman) stocks are sent by Boddington, Cole, Dobbie, Morse, and Unwin, and the remark is made "all stocks were pure as to colour." This would not satisfy the Floral Committee of the British National Sweet Pea Society. It was this very variety which led to serious trouble at one of the shows of the N.S.P.S. some years ago. It was found that John Ingman was badly mixed with Prince of Wales, and all bunches staged which contained these rogues were disqualified. Do our American friends grasp thoroughly the fact that the shape of the keel is practically the deciding factor up to the present as to what is really a Spencer or waved variety?

A number of varieties which we know give rogues in this and, we presume, in every country are not noted as doing so. Take May Campbell as an example. No mention is made of the carmine self rogue, which this variety invariably gives.

Several exceedingly interesting tables are given, showing the results obtained from sowing at different times. There seems to be little gain from autumn sowing out of doors in New York State. The plants flowered a few days earlier, but the percentage of growth was considerably less. In the autumn-sown lots there was no top growth when winter set in, and the seeds sown in November did not appear above ground until April 4. It was also proved that white-seeded Sweet Peas germinate less satisfactorily than others under cold conditions.

There is another table showing the germinating power of old seeds. These trials were made with what we term grandiflora varieties, and the results were very variable. The outcome proves that ten-year-old seeds, harvested under good conditions, give something like a 75 per cent. germination. We do not imagine seeds of Spencer varieties would show anything like such good results.

A number of illustrations are given, the most interesting being those of the standards and wings of different types. The full-page illustrations of varieties are not particularly good: they do not bring out the waved character of the flowers in many instances, but we quite recognise that they are from field specimens and not from exhibition blooms, such as we are accustomed to see in this country.

The list of best varieties we reproduce in full, marking with an asterisk those of British origin.

"THE BEST VARIETIES OF SWEET PEAS.

"The following list includes our selection from the hundreds of varieties tested under New York conditions. It is a matter of personal taste whether some of the colour sections are desirable for any particular garden; however, it is easily possible to select those varieties that are suited to individual tastes.

"Waved Varieties.—Bicolour, *Mrs. Cuthbertson, *Colleen; blue, Margaret Madison, Flora Norton Spencer, *Blue Jacket; blush, *Lady Evelyn Eyre, *Princess Victoria, Florence Morse Spencer; carmine, *John Ingman; cerise, *Chrissie Unwin; cream, buff, and ivory, Primrose Spencer, *Isobel Malcolm, *Primrose Beauty, *Lady Knox, Queen Victoria Spencer; cream-pink (deep), *Mrs. Gibbs Box, *Constance Oliver; cream-pink (pale), Mrs. Routzahn, *Lady Miller, *Mrs. Hugh Dickson; crimson, King Edward Spencer, Fancy, *Afterglow; lavender, *Florence Nightingale; magenta, *Menie Christie; marbled, *May Campbell; maroon, *Nubian, *King Manoel; maroon-purple, *Arthur Green; maroon-red, *Brunette, *Red Chief; mauve (dark), Tennant Spencer; mauve (pale), *Mrs. Heslington, *Mauve Queen; orange-pink, *Edrom Beauty, *Carene, *Helen Lewis; orange-scarlet, *Thomas Stevenson; picotee edged (cream ground), *Evelyn Hemus, *Mrs. C. W. Breadmore; picotee edged (white ground), Dainty Spencer, *Elsie Herbert, Martha Wasbington; pink (deep), *Hercules, *Countess Spencer; pink (pale), *Elfrida Pearson; rose, Marie Corelli, *Rosabelle; salmon shades, *Stirling Stent, *Melba, *Barbara; scarlet, *Dobbie's Scarlet, *Scarlet Emperor, *Red Star; striped and flaked (chocolate on grey ground), Senator Spencer; striped and flaked (purple and blue), *Loyalty; striped and flaked (red and rose), America Spencer, Aurora Spencer, *Mrs. W. J. Unwin; white, White Spencer, *Nora Unwin."

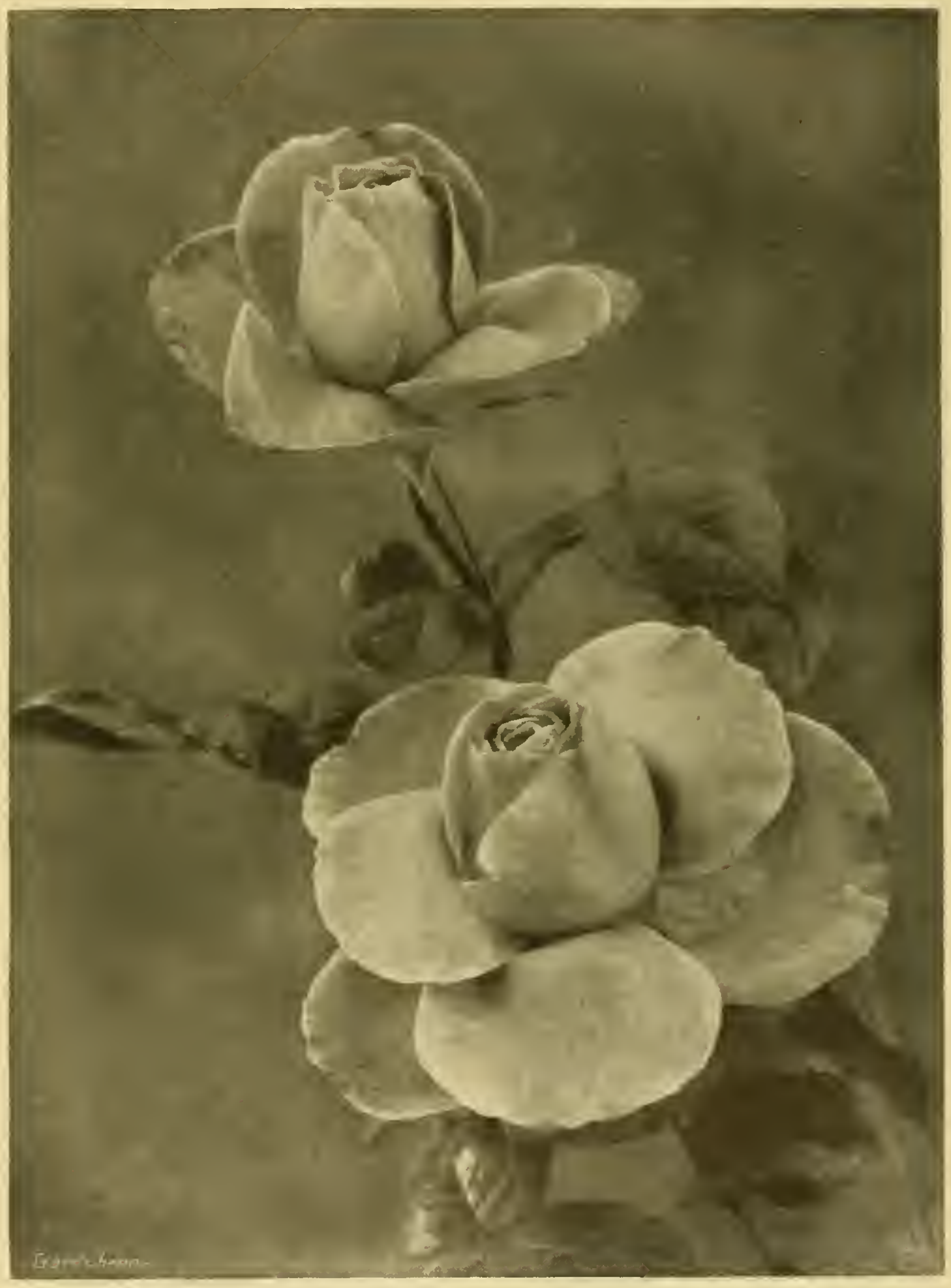


Fig. 20.—ROSE MRS. BERTRAM WALKER; H.T.; COLOUR, SALMON FLUSHED WITH PINK.
(See p. 54.)

Our remarks are not intended to be hypercritical in the very least—they are meant to be helpful. We offer our heartiest congratulations to Mr. Beal, to the American Sweet Pea Society, and to the New York State College of Agriculture, and hope the splendid example they have set will be kept before the Royal Horticultural Society in the forward move it is making in connection with its trials at Wisley.

---

* Varieties of British raising.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Trichopilia.—Certain of the plants that have flowered recently are sufficiently advanced in growth for re-potting. They are best grown in shallow pans which, when suspended from the roof-rafter, enable the flowers to be seen to advantage. At other times the plants should be arranged on the staging of an intermediate house. The potting compost may consist of two parts peat and one part broken Oak leaves and chopped Sphagnum-moss. Trichopilias will also grow well in a compost similar to that employed for Cattleyas, and, when grown in association with the latter plants, this compost is probably the best. The pans should be quite clean and well drained; make the compost firm about the base of the plants. There are numerous species and varieties, many of them easily procurable and inexpensive. T. suavis, T. fragrans, T. crispa, T. Backhousiana, T. marginata, and the cool-growing T. nobilis are all suitable for gardens. The plants, when in full growth, should be grown in a moderately moist atmosphere, but an excess of moisture at the roots must be guarded against, for this would result in the leaves and pseudo-bulbs becoming spotted. Let the plants become reasonably dry before watering them.

Cool-house Dendrobiums.—Practically all the species of Dendrobiums that require a cool treatment are evergreen. D. Victoria Regina, D. glomeratum, D. delicatum, D. Hillii, D. japonicum, D. Kingianum, D. teretifolium, the larger-growing D. Jamesianum and D. infundibulum, and the Australian species, D. speciosum, are included in this section. Any of the smaller-growing species now starting into growth may receive attention in re-potting. Where the Sphagnum-moss has grown too long it should be clipped short, or pulled out altogether and replaced with fresh material. In re-potting use plenty of material for drainage, and only a shallow layer of compost. When the plants are in full growth they require a liberal amount of water at the roots, and the atmosphere should be kept humid. During the summer and autumn syringe the plants liberally overhead at least once a day when the conditions are favourable. D. teretifolium may be grown on a block or raft with only a small quantity of fibrous peat and Sphagnum-moss about it, and the plants should be sprayed two or three times a day during the growing season. These Orchids require plenty of sunlight, and, if grown in a cool house with plenty of ventilation, only sufficient shade is necessary to prevent scorching of the leaves. As soon as growth is completed reduce the amount of root watering, affording only sufficient moisture to keep the shoots and leaves plump. D. speciosum may be grown in full exposure to the sun's rays, with plenty of ventilation during the autumn.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

The Orchard House.—The fruits in orchard houses are commencing to ripen, therefore a brisk atmosphere should be maintained and an abundance of fresh air admitted. The ventilators may be opened to their fullest extent on fine days, whilst a goodly amount of air may be admitted during the night. Orchard houses present a difficulty to the grower in that so many different kinds of fruit, each requiring different treatment, are included. Trees growing in pots should be moved to where they may receive the treatment best suited to them. Those not in bearing may be placed out-of-doors, where they will receive the full benefit of sunshine and air to ripen the wood; plunge the pots to their rims in soil or ashes. Trees bearing fruit at the ripening stage should not be overwatered, but those with fruit swelling should receive abundant supplies of moisture and be fed on frequent occasions with liquid manure. Syringe the house on mornings and evenings with a view to keeping the trees healthy and clean, and insect pests in check. Extra luxuriant shoots should be shortened a little. It is a difficult matter sometimes to keep small pyramid fruit trees in shape if they are not rigorously repressed at the top and the lower growths encouraged to develop. The principal objects to keep in view now are the ripening of the fruit and the maturation of the wood for next year.

Vines.—The houses from which the crops have been gathered should be ventilated freely, both day and night. Plenty of fresh air will not only favour the ripening of the wood, but tend to check the vines from making later growths, an important detail in vine culture. During fine weather syringe the foliage thoroughly twice daily with clear, soft water to keep insect pests in check. Should there be the slightest trace of mealy bug vaporise the vinery with a nicotine preparation, which may be used at a good strength now that the foliage is fully matured. Remove all lateral growths that tend in the slightest degree to overcrowd or shade the main spurs, it being most essential that these should now, and for the remainder of the season, derive every advantage from full exposure to the sun. Undersized spur growths that show no signs of ripening and that remain green in colour should be removed entirely. At this stage the borders, both inside and out, should be examined thoroughly, and, if found to be dry, well watered. If considered necessary, apply at the same time a dressing of fertiliser or liquid manure. If Grapes are required to hang for a long time after the berries are ripe keep the vinery cool and admit an abundance of air at the top of the house. In damp, dull weather, when fire heat is necessary use it most during the daytime, when the house may be kept under constant observation for correct ventilation. The berries of certain kinds of Grapes—Madresfield Court, for instance—are sometimes inclined to shrivel after they are fully ripe if they hang for long on the vines. This may be partly obviated by slightly shading the roof of the vinery during times of hot, sunny weather; but as soon as the bunches are cut the shading should be removed. Late Grapes are showing signs of colouring, and discretion must be used in regulating the temperatures, so that the vines receive no check now that the days are shortening. Assist the vines in every way to ripen their berries and wood gradually, but thoroughly, by maintaining a buoyant, brisk atmosphere until both are matured.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

The Conservatory.—Begonias, Fuchsias, Calceolaria Clibranii, Zonal and show Pelargoniums, Celosias and Coleus will all contribute to a bright display in the conservatory, and fresh batches of Gloxinias may be arranged with Adiantum Ferns. Achimenes in pots or baskets may also be introduced as soon as the first flowers have opened. During hot weather pay strict attention to the watering of the various plants, and feed them when they show signs of exhaustion from continued flowering. Admit plenty of air both night and day, and place a light shading over the glass during the brightest part of the day. Gladioli The Bride, Peach Blossom, and Akermanii are almost over, and the plants may be stood out-of-doors in the sunshine to ripen the corms. As Fancy Pelargoniums pass out of flower these also should be stood in the open in full sunshine to ripen the growths. Insert cuttings of these plants to furnish fresh stock. Richardias in pots are ripening their root-stocks, therefore cease watering the roots and, if rain threatens, place the pots on their sides with the crowns facing the sun. Plants of R. Pentlandii and R. Elliottiana may be ripened in a frame or on a shelf in a vinery in full exposure to sunshine, and afterwards stood in a sunny spot out-of-doors, keeping them quite dry.

Cyclamen.—Plants of the earliest batch raised from seed sown last September and October are now ready for shifting finally into pots 5 and 6 inches in diameter. The compost should be open in texture, and may consist of two parts loam, one part leaf-mould and sand, with powdered cow manure and soot added. Pot moderately firmly, and stand the plants in a close frame on a bed of ashes previously dusted with soot. Should thrips infest the plants, which may be seen by the foliage becoming distorted and crumpled, fumigate the frame at once. Syringe the plants twice daily, and shade them from direct sunshine. Last year's plants intended for flowering again next season should have most of the soil shaken from their roots, and be potted in some of the compost employed for the young plants. Place them in a close frame and spray the corms daily, but do not water the roots until growth is advanced. Pot on later batches of seedlings as they require increased room, and grow the plants without a check.

Primulas and Cinerarias.—Seedlings of these plants should be potted into 3½ and 4-inch pots in a compost consisting of equal parts loam, leaf-mould, sand and manure from a spent Mushroom bed. Stand the newly-potted plants in a cold frame facing north on a bed of ashes; failing this, they should be shaded by mats or tiffany. Prick out into boxes seedlings of later sowings, and treat them as recommended above. Spray the foliage daily and admit air as the plants become established. Fumigate with a nicotine preparation if green fly becomes troublesome. One-year-old plants may be divided and re-potted; we have a large batch treated in this way, and the plants will flower during November in 6-inch and 7-inch pots.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Globe Artichokes.—It is important to shorten the flower stems, most of which have given three heads this season. The plants may be expected to crop again in the autumn; in the meantime young plants of the current year are coming into bearing and should be treated in exactly the same manner as the older ones. I allow a space of 6 feet by 4 feet between the plants, which require no attention throughout the summer beyond that above noted, with an occasional stirring of the soil to destroy weeds and maintain a loose surface.

Potatos.—Disease may appear on the plants at any time now, and it is not a bad plan to lift the crop directly disease is detected, destroying the haulm by burning. All potatos, with the exception of Midlothian Early, are strong and vigorous, and the outlook for the later varieties is of the most favourable nature. It is remarkable that the plants are profusely flowered this season.

Seakale.—This invaluable winter vegetable has grown less well with us than in some years, and I have found it necessary to apply a late dressing of fertiliser to hasten growth and swell the crowns for early forcing. Plants propagated from portions of roots do not flower the same season, but specimens grown year after year naturally run to flower, and as soon as the spikes are observed they should be broken off just as in the case of Rhubarb. Old beds of Horse Radish also must be examined for a like purpose.

Watering.—Whilst it is obvious that irrigation is an aid to the successful production of certain vegetables—e.g., Cauliflowers and Celery—and that watering is essential on occasions of protracted droughts, at the same time watering should always be done with discretion. I have known such a water-loving crop as Celery to be spoilt by an excess of moisture at the roots, and for ordinary purposes the less reliance placed upon it the better. Last year at this time drought was so severe and the demands on the water supply so urgent that Celery was the one crop apart from newly-sown seeds for which it could be spared, and Celery had to be passed with just enough to each individual to preserve it from flagging. Usually I find a mulch of soil to be sufficient to keep this and some other crops in condition. For Celery it is sliced off the side of the ridges and spread to a thickness of 2 inches over the surface of the trenches. This does not disturb any crop that may be growing on the ridges and has the additional advantage at this period of expeditiously destroying seedling weeds which spring up so abundantly.

Winter Onions.—This crop is now ready to harvest, and if the bulbs are not quite ripe it will be necessary to allow them to mature before storing them. This may be effected in the same manner as previously advised for Shallots, but they may also be laid out thinly on a hard gravel or cinder path, or some vacant spot. If the root-end of the bulb is laid uppermost rain will have no injurious effect, whereas if this precaution be not taken the moisture will almost certainly cause the roots to grow. They will keep well enough stored dry and kept dry in heaps

THE FLOWER GARDEN.

By W. CRUMP, Gardener to Earl BEAUCHAMP, K.C.M.G.,
Madresfield Court, Worcestershire.

Iris Kaempferi.—These beautiful hardy flowers are easy of cultivation and are best planted in masses of mixed colours on the margins of streams or pools. They are easily raised from seed, which should be saved as soon as it is ripe from the best flowers. These Irises have flowered splendidly in these gardens planted in stations prepared as follows :—The whole of the soil and subsoil was removed from irregular shaped spaces on the margin of a pool, each, say, 20 feet by 8 or 9 feet, to a depth of about six inches below the level of the water. The bottom was broken up to allow tho water to percolate to this lower stratum. On this was placed mud or decomposed vegetable matter, then on the top of this about one foot of turfy loam and leaf-mould or decomposed, sandy, garden refuse : for the plants are gross feeders. If one-year-old seedlings are planted as soon as they are ready for shifting, they soon become large, well flowering clumps, quite equal to expensive, named varieties. The raising of choice, vigorous seedlings annually cannot be too strongly recommended, and would soon revolutionise the cultivation of these extremely handsome hardy flowers.

Galtonia candicans.—These handsome summer flowering plants need careful attention in staking, for the stems grow rapidly daily. Keep the Dutch hoe at work in all beds and borders, as all weeds are easily destroyed in the seedling stage. Galtonias are most effective in association with bronze-foliaged Paeonies, which they follow in bloom.

Hydrangeas of the arborescens and grandiflora types are flowering grandly. The plants last for a long time in bloom and are most effective in the front of flowering shrubs. The flower heads are borne on rather weakly stems and require supporting to stakes. H. paniculata grandiflora is a most useful and effective variety for grouping in the pleasure grounds. Now is a good time to feed the plants with soot or fertilisers, which will cause the flower trusses to grow larger. Madame Mouillère, Radiant, and other varieties of French raising are all acquisitions to summer flowering shrubs.

Veronica.—V. salicifolium, V. Traversii and V. Kirkii are in glorious bloom, and all these species are quite hardy. The variety Autumn Glory is a dwarf grower and late bloomer, a gem of the family. Veronicas will flourish and flower freely when planted in ordinary soil, and their cultivation gives very little trouble. The tender varieties such as Véronique, Purple Queen, La Séduisante, Hulkeana and Blue Gem need shelter in winter, but they well repay for the trouble this entails.

Spiraea aërifolia is, at the present time, the most beautiful of all the family, with its graceful feathery plumes, and the plant is as hardy as the English Oak. As soon as the flowers are over the shoots need pruning slightly.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to Lady NORTHCOTE,
Eastwell Park, Kent.

Morello Cherries.—These fruits are colouring rapidly, and before the nets are placed in position the new growth should receive attention. If the trees were disbudded, as recommended in an earlier calendar, most of the new shoots that remain will be required, either for extension or for furnishing the wall space after the old fruiting wood has been removed. It is a little difficult to find room to train in all the young shoots while the fruit is hanging, but a little extra care in this matter will be well repaid. Tie the shoots to the wires or nail them to the walls as the case may be, not covering the fruit unnecessarily, and see that the trees are in a thoroughly clean condition before arranging the nets. If traces of aphis remain, give the trees a good washing with clear water applied by means of the garden hose and water the roots in dry weather. At this stage it is not wise to employ insecticides. See that the mulching material is replaced after watering the roots and make the nets bird-proof before leaving them. Beyond this very little attention will be required until the fruit is ready to pick.

Blackberries.—The plants are growing strongly, and if trained to fences or trellises, secure the young shoots to the supports before they become damaged by storms. They should be tied away from the fruit as much as possible, or there will be a danger later on of the latter being completely covered by the foliage. Fruit grown in full exposure to the sunshine is always the best flavoured. Apart from growing Brambles in the orthodox manner on poles, fences, or trellis-work, Blackberries may be allowed to ramble over stones, rocks, or old walls in out-of-the-way parts of the garden. As Blackberries ripen late in the season, they are doubly welcome.

The Loganberry.—The cultivation of this useful berry has increased in an extraordinary degree of late years, as its usefulness became better known. In dry seasons like the present one Raspberries are soon over, and then the value of the Loganberry is appreciated. Being of a robust and vigorous habit, the Loganberry sends its roots deeply into the soil, and is able to find moisture during times of drought. It is a very prolific bearer, and should be planted in all gardens. New shoots at the base of the plants are growing rapidly, and should be secured out of harm's way for the present. After the fruit is picked, the old canes must be cut clean away and the young ones trained thinly in their places.

Raspberries should be gathered only when quite dry. The canes should be gone over at frequent intervals, as the fruit ripens and deteriorates quickly. Owing to the soft nature of the berries they require handling with extra care. Those intended for transit should be placed in wide-mouthed bottles, which can be packed upright in boxes, or amongst the vegetables in the vegetable hamper.

THE APIARY.

By CHLORIS.

Judging.—Where small horticultural societies have exhibits of honey and wax, they erroneously expect a gardener to award the prizes in this division also, forgetting that it requires an expert to do the work as it ought to be done. With the object of helping those who may be called upon to perform the task I purpose giving a few hints. (1) Extracted honey must be first judged by its flavour, because it is a food, and if flavour is lacking, it cannot be enjoyed. When flavour is placed so prominently, one does not mean that the source can be at once named, but it should be mellow, and should leave no irritation in the throat when swallowed. Some qualities of honey leave a burning sensation in the throat. (2) Density will stand next, all prize-winning honey should be as dense as possible. (3) Colour.—Unfortunately there is a prejudice among amateur judges to consider light-coloured honey the best. It will be often found that a very light-coloured honey—even water-coloured—has very little flavour, and as flavour is the first essential in honey, this colour must not be allowed to rule out better flavoured samples. In the light classes it will be found that a bright amber should be the standard, while in other classes a medium to darker colour should be aimed at. (4) Aroma.—This needs a delicate palate for judging, for the best honey will have a very delicate aroma, and by this means the source is identified. To perform the task, remove the cap, and at once smell the honey, and afterwards taste it. Herein is a hint for the exhibitor, to gain in this matter : immediately after extracting honey, bottle it, and place the cap in position before this fine aroma evaporates. (5) Brightness.—Honey should be bright and quite clear and free from bubbles and particles of wax. Encourage the use of screw-cap jars in preference to the tie-over, and should the honey when the cap is removed show scum—which is due to air bubbles—the exhibitor must lose points.

Heather Honey is rather difficult to judge, for it has a sweet and at the same time a bitter flavour, and is dark amber in colour. Owing to its great density it is impossible to remove all the air bubbles; these give it a pretty appearance, but are often imagined to be due to fermentation.

Granulated Honey is sometimes admitted early in the season, although it is more common in the autumn shows. Good honey in this class will be nearly white, smooth in grain, touching the glass all round, free from signs of fermentation, and, above all, of good flavour.

Sections. — In this class capping will be first considered. Honey from Sainfoin will have cappings of a pale straw colour, and that from Clover, white. It is very unfair to have both classes together, they should be separate. The capping should be even and thin, not greasy-looking, and free from travel stains. The sections should be evenly filled, built on foundation of worker base, and free from popholes. Unfortunately, exhibitors are sometimes given to faking popholes by ingeniously making a false cap of fine paper of the exact tint of the wax, and in order to get well-filled sections others resort to syrup-feeding, and this may be discovered rather easily, for the cappings will be dull white with an unnatural look. Overlacing must be punished.

Wax.—When wax is made from cappings only it will be almost white, but generally the colour is primrose. A good exhibit will be free from cracks, adulteration or bleaching, clean, plainly moulded, and delicate in aroma. When broken the cake will be flaky, and by this means adulteration is discovered, because adulterated specimens lack this characteristic.

Tasting.—When tasting honey never put the taster in the mouth, but put the honey on the tip of the finger, and put that in the mouth ; and in the case of granulated honey, do not make deep holes in the samples, while sections must have not more than a single cell broken for a tasting sample, because when more are injured the sections are rendered valueless for sale, and the exhibitor feels injured, and rightly so, with such unnecessary damage to his property.

Ventilating a Hive where Supered.—During the hottest part of the year it is essential that hives should be ventilated, but this must be done without causing a draught. Many colonies swarm because of the excessive internal and external heat. To avoid swarming, raise the hive on the stand from half to one inch by inserting four wedges, one at each corner. Where colonies are very strong, it is an advantage to extend the alighting board by placing a board against the alighting board, and standing on the ground at any angle of 60°.

Publications Received.—*On the Lack of Adaptation in the Tristichacea and Podostemacea.* By J. C. Willis, M.A., Sc.D.—*Batanical Garden, Rio de Janeiro.* Reprinted from *Proceedings of Royal Society*, B. Vol. 87, 1914.—*Gardening for Amateurs.* Edited by H. H. Thomas. Part 10. Price 7d. net. (Cassell & Co., London.)—*Annalen des K. K. Naturhistorischen Hofmuseums.* By Dr. Franz Steindachner. Vol. 27, 1913, Vienna.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication. *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News. — *Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 21—
Southampton Hort. Soc. Sh. (2 days).

WEDNESDAY, JULY 22—
Leamington and County Sh. (2 days). Haywards Heath Sh. Preston Sh. (2 days). Cardiff Sh. (2 days). Yorkshire Agric. Soc. Sh., Bradford (3 days). Watford Hort. Soc. Sh. Sevenoaks Hort. Soc. Sh.

THURSDAY, JULY 23—
Preston (Brighton) Sh. Roehampton Sh. Roy. Bot. Soc. meet. Herefordshire and West of England Rose Sh.

FRIDAY, JULY 24—
Cheadle Hort. Soc. Sh. (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 63.0.

ACTUAL TEMPERATURES:—
LONDON, *Wednesday*, July 15: Max. 73°; Min. 59°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, July 16 (10 a.m.); Bar. 29.6; Temp. 70°. Weather—Cloudy to fair.
PROVINCES, *Wednesday*, July 15: Max. 71°, Weymouth; Min. 51°, Malvern.

Submerged Forests.*

This, the 62nd volume of the *Cambridge Manuals of Science*, is one of the most interesting of that excellent series.

Remains of forests buried beneath the sea between the tidemarks are common round our coasts, and the popular view of their origin is summed up pithily in the local name, "Noah's Woods," by which they are often known. Those who are patient and enterprising enough to explore the black, peaty soil in which the trunks and débris of trees are embedded may discover that the plant remains are mainly those of Oak, Hazel, Sallow, and Alder, mingled with those of lesser swamp plants, such for example as the rhizomes of Osmunda regalis.

Much discussion has ranged round the causes which have led to the submersion of these forests. Fortunately, evidence pointing definitely to an explanation of the causes is to be derived from the sections obtained in the course of excavations for the purpose of dock-making. In such cases series of strata are passed through. These layers form a sort of semi-lumber-room of the past and contain old shoes, mediaeval pottery, sunk boats, and drifted wreckage, all buried in the silt. Below this burial ground of the past 3,000 or 4,000 years may be found a black, peaty soil showing like that previously referred to Alders and Hazels yet rooted in their original positions. Below this again may be found more silt, and a second remains of a tree-clad land surface, and yet deeper, reaching to so much as 50 feet below the present surface, the remains of older forests are to be discovered. Clearly nothing but land subsidence and silting up could have produced this state of affairs.

Mr. Clement Reid describes in a series of interesting chapters the submerged forests of the Thames Valley, *e.g.*, those brought to light during the excavations of Tilbury Docks. There the remains lie so deep as 60-70 feet below the present level, and the fact points to the conclusion that long ago the Thames had cut a level 60-70 feet below its present bed. In those far-off times the southern part of the North Sea must have been a vast marsh, and the estuary of the Thames meandered so far eastward as the latitude of the Dogger Bank, and may indeed have joined waters with the Rhine.

Mr. Clement Reid traces the distribution of the forests round the East Coast to the famous Cromer forest bed, and is able to show that in the Norfolk Broads we have an example of the effects of slow subsidence. The author estimates that this subsidence ceased about 2,500 years ago, and that since then the silting-up of narrow valleys has created estuaries, diverted the sluggish rivers, and imparted their present characters to these delightful if somewhat treacherous haunts of the small yacht. From the East Coast Mr. Clement Reid steps across to the Dogger Bank, which lies opposite Northumberland, Durham, and Yorkshire, about 60 miles from the nearest land. From an examination of its contours and the remains of animals, etc., brought up by oyster-dredgers, he is able to reconstruct the map of Western Europe and to show that in no vastly remote period Denmark was joined by the Dogger Bank to the coast of Yorkshire, and that not improbably the then vast river, the Rhine, flowing northward caught up the waters of the Thames and bore them with its own to form a great estuary which debouched into the North Sea between the Dogger Bank and the Yorkshire coast.

In like manner Mr. Clement Reid journeys round the coast and shows us that when the last obscure spot on the earth's surface has revealed itself to the intrepidity of the explorer there will remain close at hand and at home illimitable scope for discovery. From the dim and defaced records of the ooze of our coasts we may yet reconstruct past episodes in the life of our land, and learn the causes which have been and are at work moulding it in its present fashion. To those who love that romance which science weaves with the warp of fact and the woof of inference, we recommend very cordially Mr. Clement Reid's fascinating little book.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Gloriosa Rothschildiana.

SOME NEW ROSES.—At several recent metropolitan shows Messrs. WM. PAUL AND SON have exhibited large vases of their new, single-flowered H.T. Rose Waltham Scarlet, illustrated in fig. 21. The variety was derived from a cross between a T. and a H.T. rose, and possesses exceptional garden value. The bushes commence to flower early in June and continue to yield a beautiful display until severe frosts occur. The plant is of a bushy, spreading habit, and produces large sprays of flower. The shapely buds are scarlet, and when the flower is fully expanded this colour becomes a rich pink. As a Rose for the garden and for supplying blooms for decorative purposes, this charming variety should prove a great acquisition. Augustus Hartmann (fig. 19) is a cerise-pink coloured Hybrid Tea variety, and is a Gold Medal Rose of the year, having received this distinction from the National Rose Society at the Metropolitan Exhibition on the 7th inst., where it was exhibited by Messrs. B. R. CANT AND SONS. The blooms were the most vivid in colour of all the new varieties exhibited on that occasion, and the variety was generally regarded as the best new seedling of the year. Mrs. Bertram Walker, illustrated in fig. 20, is a fragrant variety of salmon colour with a suffusion of pink. This variety is also a Gold Medal Rose of the year, and is spoken highly of for its qualities as a garden variety, the flowering being remarkably free and the constitution vigorous. It was shown by Messrs. HUGH DICKSON, LTD. Margaret Dickson Hamill (fig. 22) was also awarded the National Rose Society's Gold Medal on the 7th inst. The blooms are fragrant and suggestive of Mme. Ravary, but larger and flushed with salmon. The variety belongs to the Hybrid Tea race, and is said to possess unusual vigour. It was exhibited by Messrs. ALEX. DICKSON AND SONS.

R.H.S. ORCHID SHOW, 1915.—At the meeting of the R.H.S. Orchid Committee on Tuesday last the chairman, Mr J. GURNEY FOWLER, asked the opinion of the committee as to the advisability of arranging for an autumn show of Orchids in 1915, it being now too late to consider the question for this season as the fixtures had been published. The members present agreed that such a show should be arranged, and some expressed surprise that, after the very satisfactory experience of the exhibition held on Nov. 5 and 6, 1912, a similar event should not have been arranged for the present year.

CHURCH ARMY'S CITY GARDENS.—The Countess of DUNDONALD will distribute the prizes to successful plot holders of the Church Army's eight "City Gardens" at the fifth annual prize-giving, which will take place at the Merrow Street "City Garden," Walworth, to-day (18th inst.). These "City Gardens" are waste building plots, loaned by the respective authorities to the Church Army, dug over in winter by men out of work, and divided into free plots for married men with small wages.

HORTICULTURE AT THE VIENNA CENTENARY EXHIBITION, 1915.—The k.k. Horticultural Society in Vienna has proved with its previous exhibition of Roses and shrubs that it is possible in Austria to hold exhibitions of horticultural products on modern lines. The large number of entries and the great interest shown by the public are proofs that a well-arranged horticultural exhibition may

---

* *Submerged Forests.* By Clement Reid, F.R.S. Cambridge Manuals of Science. (Cambridge University Press.) Price 1s.

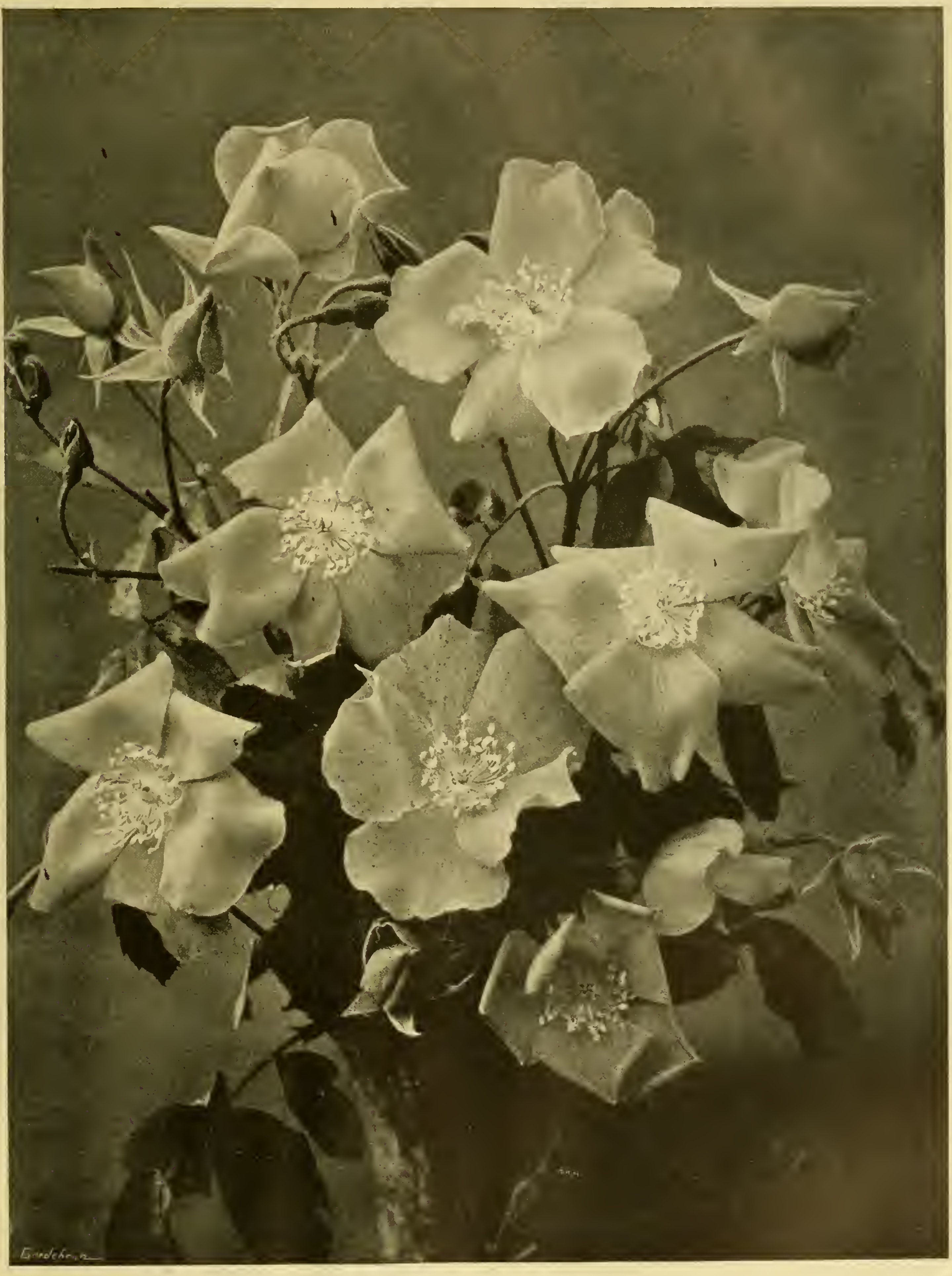


FIG. 21.—ROSE WALTHAM SCARLET : A SINGLE, H.T. VARIETY.
(R.H.S. Award of Merit, June 30, 1914—see p. 54.)

rely on large support. Thus encouraged, the Society has decided to organise an exhibition in 1915 on a yet larger scale. It will be open from May to October, and there will be exhibits of flowers, fruit, vegetables and cut flowers. The arrangements are in the hands of the General Secretary and Director, Mr. KURT SCHECHNER. It rests with the Austrian gardeners to embrace their opportunity and to show what they can do. Inquiries should be addressed to the Information Bureau of the Exhibition.

"THE ORCHID REVIEW."—The current issue of the *Orchid Review* contains some particulars of the Reichenbachian Herbarium, by Prof. ZAHLBRUCKNER, Keeper of the Imperial Hofmuseum, Vienna, which will be read with interest. On May 6, the twenty-fifth anniversary of Prof. REICHENBACH'S death, a commission of the authorities and officials proceeded to examine the Herbarium, and satisfied itself that the eight cases in which the Orchids arrived from Hamburgh were complete and undamaged, after which the cases were opened, and an inventory was taken and the condition of the contents ascertained. With the greatest satisfaction it can be stated that the materials have not suffered by their long confinement, and that they are in the same condition as when received. Some materials, however, were found that were not REICHENBACH'S property, and these are being separated with a view to their restoration to their original owners, in accordance with claims made at the time that the Herbarium was sealed up. It appears that the specimens are in loose covers, and separate from the analytical drawings and a lot of beautiful water-colour paintings. The working up of the materials is going steadily forward, and it is hoped to have it completed by the end of the year. The material will then be incorporated in the General Herbarium and be placed at the disposal of the scientific world for purposes of study. The issue also contains an article on Miltonia vexillaria and its varieties, with an account of their geographical distribution, a portrait of Lieut.-Colonel Sir GEORGE L. HOLFORD, and an illustration of a remarkable specimen of Aërides odoratum which flowered in the collection of the late RICHARD LE DOUX.

ORCHARD HOUSE TREES AT SHREWSBURY.—We are informed that the exhibit of pot fruit trees shown by the King's Acre Nurseries at the Royal Agricultural Society's exhibition (see p. 42) was awarded a Gold Medal.

HOPS AND POTATOS IN GERMANY.—His Majesty's Consul-General at Munich, in a report dated July 10, states that although wet and cold weather during May delayed growth, prospects for the Hop crop in Bavaria are very promising. Aphis attacks have been prevalent, but are decreasing rapidly and not much damage has been done. At the beginning of July the plants looked healthy. The official report relating to the condition of the crops at the beginning of July states that Potatos in Germany frequently came up irregularly and are still patchy in places. The condition of the crop is given as 2.7 (2 = good, 3 = average).

DIAMOND BLACK MOTH.—The Board of Agriculture and Fisheries desires to inform all farmers, especially those in Norfolk and Cumberland, that a leaflet on the diamond black moth can be obtained, post free and gratis, on application to the secretary, Board of Agriculture and Fisheries, Whitehall Place, London. The larvae of this moth are doing great injury to Swedes and Turnips, especially in the districts mentioned, but the cause of the injury does not appear to be recognised in many cases, as the caterpillars are very small.

THE LATE DR. JACQUES HUBER.—The *Kew Bulletin* gives the following particulars of the late Dr. JACQUES HUBER, Director of the Museum Goeldi, Para, whose death was recorded in the *Gardeners' Chronicle* (April 18, 1914, p. 276). Dr. HUBER went to Para in the year 1895, and was made Director of the Botanical Section of the newly-reorganised State Museum of Natural Science and Ethnography (now Museum Goeldi). Here he laid out the botanic garden and undertook numerous scientific journeys into different parts of Brazil, the results of which added considerably to our knowledge of the Brazilian flora. In addition to his general botanical and geographical studies he had an extensive knowledge of Para rubber and its cultivation, and many of his articles on Hevea and other rubber plants were published in the Bulletin of the Herbier Boissier. In March, 1907, when Dr. GOELDI returned to Europe, Dr. HUBER was appointed Director of the Goeldi Museum.

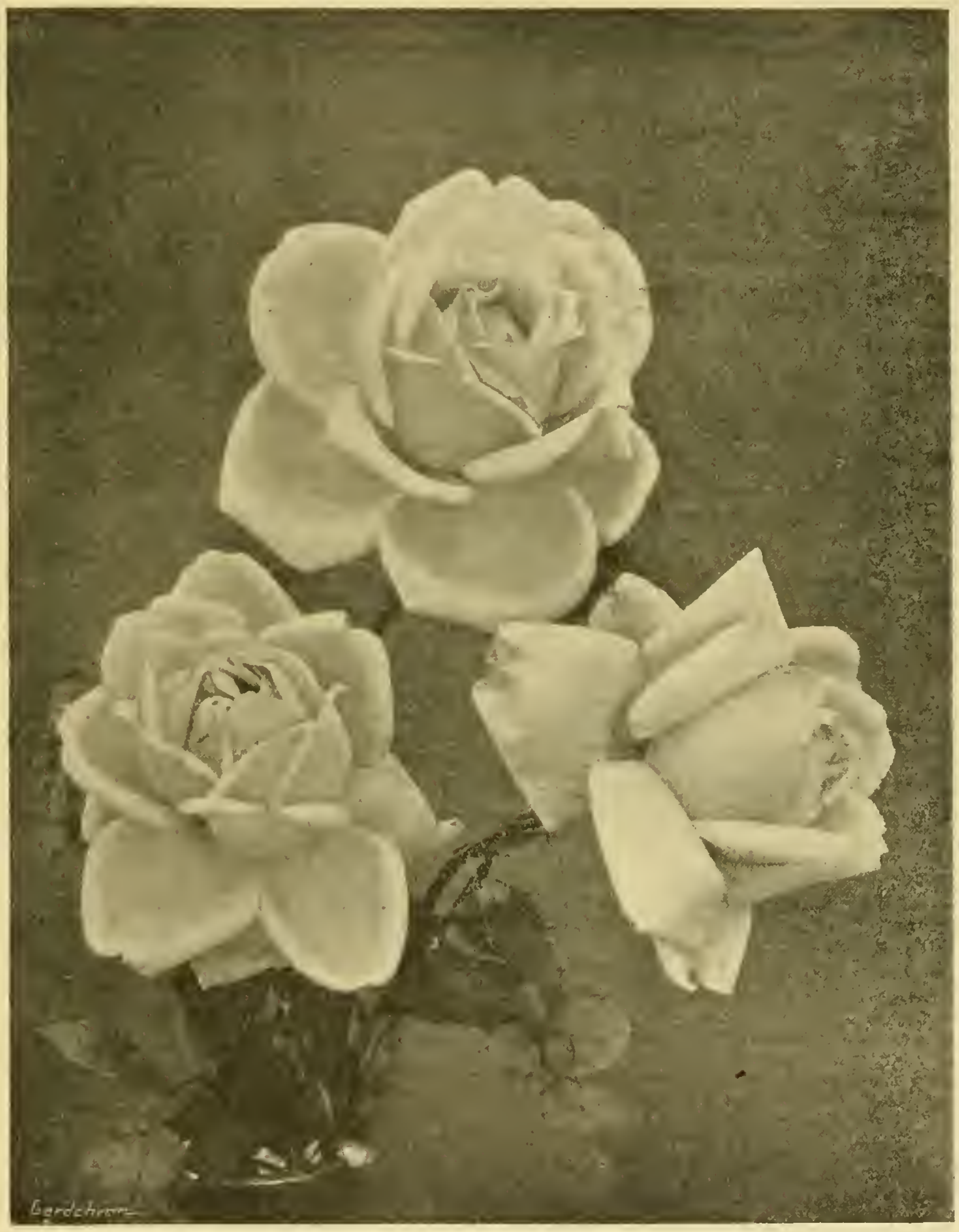


FIG. 22.—ROSE MARGARET DICKSON HAMILL: COLOUR, ORANGE-YELLOW FLUSHED WITH SALMON.
(Awarded N.R.S. Gold Medal on the 7th inst.—see p. 54.)

NEW ORCHIDS.—The thirteenth number of the second series of the *Bulletin du Jardin Botanique de Buitenzorg* (March, 1914) is wholly taken up with descriptions of new Malayan and Papuan Orchids by Dr. J. J. SMITH. About 75 species are described in as many pages. The 34 additional Malayan species are fully described, occupying 52 pages; thus averaging about a page and a half of Latin, without distinctive type for the differential characters. The only help in this direction are comparisons with allied species. Of the Papuan species only preliminary descriptions are given. No new genus is described, and the species belong to a small number of genera, Dendrobium and Bulbophyllum being represented by fourteen each, and Glomera by eight. A number of the Papuan novelties are from elevations of 10,000 feet and upwards, and belong to the genera Platanthera, Peristylus, Glomera, etc.

THE ROSE SOCIETY OF ONTARIO.—The first *Annual* of the Rose Society of Ontario consists of a pamphlet of 50 pages, illustrated with photographs and coloured plates from Lumière photographs. The Society was formed on July 19, 1913, under the presidency of Mr. E. T. COOK, whom many Rosarians in this country will remember, and we offer both Society and president our congratulations on the satisfactory beginning of their operations. Besides the holding of its various shows the Society has inaugurated a series of meetings during the winter months, at which lectures on matters relating to Roses and Rose-growing are discussed, and, in addition to giving an account of the doings of the Society, the *Annual* contains notices of these lectures. Mr. E. T. COOK discusses the Rose garden and the culture of Roses. Mrs. BAINES treats of Rose pests, and we gather from her article that the Roses of Canada suffer in much the same way as ours in this country. Soil and fertilisers are dealt with by Mr. MANTON, the propagation of Roses by Mr. JAMES BRYSON, and greenhouse Roses by Mr. ALLEN. The *Annual* also gives lists of varieties which are best suited for growing in Ontario. It is perhaps not surprising to find that the Hybrid Perpetuals provide a large proportion (about one-third) of these, doubtless on account of their hardiness.

AMERICAN WHEELBARROWS IN ENGLAND.—In talking recently with a Bradford merchant of builders' supplies, etc., who obtains American wheelbarrows from a Manchester importer, the statement was made that owing to the fact that wheelwrights in England will not trouble to make wheelbarrows, except when they are short of other work, there is a good sale for American wheelbarrows. They are well spoken of, being made of good wood, and selling at a reasonable price. They are imported knocked down, the retailer having merely to fasten them together with a few bolts, screws, and nails. One feature, however, is criticised, and that is that the wooden shafts are not hollowed out, as are the English ones, so as to afford a good, comfortable grip. The statement was made that if the American manufacturer would only attend to that detail the English wheelbarrows would never be asked for.—*Florists' Exchange, U.S.A.*

PROPOSED PUBLIC PARK AT LOCH LOMOND.—The committee appointed by the Glasgow Corporation to consider the suggestion to acquire a public park at Loch Lomond has reported in favour of the proposal. The price at which the promoters secured an option is £30,000, but the ultimate cost would be about £15,000.

HOME CORRESPONDENCE.

(*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*)

FASTIGIATE ROBINIA.—Having read Prof. Henry's article in the *Gardeners' Chronicle* on Poplars, and noticing the remarks on fastigiate trees, I think that you may be interested to know that in our garden there is a very tall fastigiate specimen of Robinia Pseud-acacia. Many mistake it for a Poplar. It has been planted quite twenty years. *Miss Florence Grimsdick, Haywards Heath.*

THE LESSER NARCISSUS FLY.—No objection can possibly be taken to the tone of the letter of Mr. A. J. Bliss (p. 31). It is now recognised by him, as has been obvious from the first, that it is impossible for him to prove the negative; and I freely admit that it is for those who maintain that, whether or not the larvae of this fly may at times feed on decayed matter in the bulb, they do equally at times feed also on the healthy bulb, and hence the dangerous character of the fly. That is the true issue, which I accept. And surely there has now been established more than a strong *prima facie* case that this is so. I need not recapitulate the evidence summed up in my last note, but since that was written we have further evidence bearing directly on the issue stated. It comes in the shape of the following minute from the proceedings of the last meeting of the Scientific Committee of the R.H.S. as follows:—"Mr. Chittenden also showed a specimen of Narcissus bulb sent him by Mr. Backhouse with a number of the larvae of the lesser Narcissus fly feeding in the neck of the bulb under such circumstances as left little doubt that they were the originators of the attack, not merely followers feeding on damaged tissue due to other and earlier attack." And yet, in the face of all this, Mr. Bliss maintains that, in his opinion, "the case for healthy bulbs being attacked by the Eumerus is an increasingly weak one." In other words, the stronger the evidence the weaker the case. Truly, a remarkable conclusion. He boldly expresses doubt concerning the cases which Mr. Chittenden has mentioned, a doubt which will certainly not be shared by anyone who knows the extreme care and acumen with which that gentleman carries out his investigations. But may I say that I venture to doubt the "doubt" of Mr. Bliss, for, marvellous to relate, he concludes his letter with the statement that he "joins in advising that all doubtful bulbs should be at once taken up and examined, and all containing larvae should be destroyed." But why, if the larvae are only doing useful "scavenger" work? Mr. Bliss is almost exact in his wording with the words of caution which I used at the outset, and which led Mr. Bliss to intervene with correspondence the whole trend of which was to show that the trouble involved by my suggestion was likely to be unnecessary. However, we welcome the convert even at the eleventh hour, and, all of us at last recommending the same thing, it seems to me that the controversy ends. But Mr. Bliss raises a new and interesting point which, although at present a matter of speculation only, may have something in it. Referring to Mr. Chittenden's statement with reference to "the decay of the bulb following the attack of the Eumerus," Mr. Bliss suggests the possibility of the flies disseminating the disease as they fly from plant to plant in depositing their eggs. I hope that Mr. Bliss will investigate this point. If he will do so useful work will have been done. *Charles E. Shea.*

——In taking up my Daffodils this year I have come across many diseased bulbs, some with Eumerus grubs in them and some not, but all that had Eumerus in them were diseased, and I have obtained new evidence which, I think, puts it beyond reasonable doubt that the Eumerus is simply a scavenger, never feeds on the living and healthy substance, and probably never attacks a sound bulb. There is probably more than one disease present among my bulbs, but I am now referring only to those affected with what I take to be Fusarium bulbigenum, since the symptoms agree with those described by Mr. Massee in the *Kew Bulletin* (No. 8, 1913) (see also *Gardeners' Chronicle*, December 13, 1913, p. 124). It is a characteristic of this disease in most of the bulbs which I have examined that it travels down the layers (scales) and not across them. Apparently it cannot pass through the skin of the scales; at any rate, not in the earlier stages. When it reaches the base it spreads across and up the other layers (which till then remain quite fresh and healthy) till all the bulb is invaded. This accords well with the description of Fusarium mentioned above, in which it is stated that it is conveyed to the bulbs from the leaves in the first instance, and that in the earlier stages only the tips of the scales where these infected leaves have died off show the symptoms of the disease. If a bulb, in which the disease is in its early stages, before it has reached the base, is cut in half longitudinally, the soft and brown layers in which the disease has spread are seen alternating with the quite healthy (white and solid) layers. In some such bulbs examined there were young Eumerus larvae which had penetrated about half an inch, and in every case they were feeding in and down the diseased layers, leaving the healthy scales entirely untouched. The effect due to the Eumerus, from the top down to where they were found, is quite easily distinguished from the effect of the disease (which has advanced some way beyond them), and could not be mistaken by anyone having a number of bulbs in varying stages to compare together. This fact—that in these partially infected bulbs the Eumerus feeds only on the rotting portions—taken together with all the evidence I and others have brought forward of the grubs feeding on diseased bulbs, of their being found in conjunction with other larvae in the same bulb, and of their being found feeding on the rotting substance of plants other than Daffodils, is surely very significant, and if all this does not constitute an absolute demonstration, it does, at any rate, amount to an overwhelming probability that the Eumerus is solely a scavenger. No doubt this conclusion will not be unreservedly accepted until it has been confirmed by the observations of trained experts, and quite properly so. But the proving of a negative is a long process if all the possible objections have to be tested and eliminated, and in the meantime I think all practical growers will be satisfied that a *prima facie* case has at least been established. Having taken up the unorthodox side in this question I may as well be hanged for a sheep as a lamb, and now that I have no longer any doubt that it is a scavenger I will venture to go a step further. So far from the Eumerus being a destructive pest, it is quite possible—it is even very likely—that it is beneficial, and should perhaps be encouraged rather than exterminated. For by feeding on diseased bulbs it eats up and, presumably, destroys all (or a great amount) of the fungus which would otherwise run its course uninterrupted, leaving the soil full of spores to start future infection. And if this is so it is evident that the wholesale destruction of the flies may do great harm and result in an enormous increase of the Fusarium. I have already a certain amount of evidence in favour of this conclusion.—*A. J. Bliss.*

NARCISSUS SEEDING.—A seed pod of Narcissus Mme. de Graaff, which had been cross-fertilised was accidentally broken off at about the end of May, just after it had attained its full growth. I quite thought it would prove worthless, but decided to let it remain on the damp soil to see if any seeds matured. The broken end was left under the foliage and, being near to a wall on a north border, it was always moist. On June 29 the capsule showed signs of ripening, and was taken away. When opened six seeds were found inside, five of them fully developed, and one not so plump as the others. Thus after lying more than a month quite severed from the plant the pod has ripened six seeds at the normal time. It will be interesting to see if the seeds germinate. *W. H. Divers, V.M.H., Belvoir Castle Gardens, Grantham.*

GRAPE PRIMAVIS MUSCAT.—I am sending for your table a bunch of Primavis Muscat or Early White Frontignan Grape. This fine variety, if better known, would undoubtedly become one of our foremost varieties for early use on account of its rich Muscat flavour. The berries are liable to crack, but this, as in the case of Madresfield Court, can, with a little management, be overcome, allowing the lateral growths to grow freely instead of stopping them in the usual way. Grown in the same house as Foster's Seedling and Black Hamburgh, it is a month in advance of either of these varieties. There is only one vine here, and previous to this year the bunches have been almost worthless, nearly all the berries splitting just before ripening. However, the entire crop has ripened this season without a single berry showing any signs of cracking. Perhaps some of your readers will give their experience of this variety, the quality of which is of the first rank. *S. Ely, Marlands, West Horsham.* (The Grapes were very good, but would have been better for being left on the vine a little longer.—EDS.)

RHEUM ALEXANDRAE.—In answer to Mr. H. J. Elwes (p. 457), I may state that Rheum Alexandrae was introduced from China by Messrs. James Veitch and Sons through their collector, Mr. E. H. Wilson. It was distributed by Messrs. Veitch in the autumn of 1909, and since that time I have seen it growing remarkably well on the slopes of Coombe Wood Nursery. Though this nursery is unfortunately in a state of dissolution, no doubt Messrs. Veitch could still supply it. The large, pale yellow, leaf-like bracts form a very striking feature, and fortunately the plant is more amenable to cultivation than its Himalayan relative—Rheum nobile. *W. Truelove.*

GERMINATION OF SEEDS IN THE FRUIT.—Recently on opening a fruit of Cereus lividus, which was one year old and quite ripe, I found that a quantity of the seed had germinated, and many formed cotyledons inside the fruit. This plant is a native of hot, dry regions, and the germination of the seedlings in this manner may be a special adaptation. I have planted the seedlings to note their progress. *C. Robinson, St. Hilary Gardens, Cowbridge.*

SOCIETIES.

ROYAL HORTICULTURAL.

July 14.—There was a very poor attendance at the fortnightly meeting, held on Tuesday last in the Vincent Square Hall, Westminster, and the exhibition was the smallest of the year. The largest floral exhibit consisted of a group of perennial Phlox in great variety, and this was awarded a Gold Medal. The Floral Committee recommended four Awards of Merit to novelties.

There were fewer groups of Orchids than usual, but a number of novelties were submitted for award, and the Orchid Committee recommended three First-class Certificates and one Award of Merit.

No award was made to a novelty by the Fruit and Vegetable Committee, but this body awarded three Medals to groups.

At the 3 o'clock meeting, in the Lecture Room, the twelfth Masters Memorial Lecture was delivered by Professor J. Bretland Farmer, F.R.S.

Floral Committee.

Present: Henry B. May, Esq. (in the chair). Messrs. C. T. Druery, J. W. Moorman, C. R. Fielder, C. Blick, J. F. McLeod, John Dickson, Chas. Dixon, H. J. Jones, Chas. E. Shea, J. T. Bennett-Pöe, Chas. E. Pearson, W. P. Thomson, E. H. Jenkins, E. A. Bowles, B. Crisp, John Green, F. W. Harvey, W. H. Page, John Jennings, R. Hooper Pearson, and W. Cuthbertson.

AWARDS OF MERIT.

Nemesia, Marsden Jones' dark-flowered strain.—This is a vigorous large-flowered strain in which the orange ground colour of the flowers is overlaid to different degrees with deep maroon-black. Some flowers are but lightly dotted, some are almost a self-coloured maroon, and between these extremes the strain includes a number of variably dotted types of great beauty, always, however, with the orange ground colour. Shown by Mr. Marsden Jones, Malpas, Cheshire.

Gladiolus Eldorado.—Some fine spikes carrying as many as 16 flowers each were shown of this new variety, which in its blotching shows the influence of the Lemoinei race, but the flowers are of the largest size, expanding to 4 or 5 inches in diameter, and the segments show a well-rounded broad form and good substance. The colour is pale yellow, with large scarlet blotches on the lower segments, which run back to the dark throat. The yellow ground colour is also influenced by the thin shading of red which marks the exterior of the segments and shows through. It is one of the best garden forms. Shown by Messrs. Kelway and Son.

Michauxia Tchihatcheffii (see fig. 23). — A handsome, little-known biennial, or even annual, discovered by the Russian explorer Tchihatchef in 1849 in the Cilician Taurus. It has tall, rigidly erect stems, with coarse, rough, sharply serrate leaves at the base, but is strikingly furnished in the upper half with a dense columnar mass of open white bells. The corolla has 8 lobes, which spread flat or recurve from a shallow tube. From this the large stigma protrudes, carrying, in the young flowers, a mass of yellow pollen from the anthers which are discharged on to it at an early stage. As a rule a cluster of three flowers breaks from each bract on the main stem, so that the inflorescence is richly furnished. It is figured at t. 7,742 in the *Bot. Mag.* The plants shown were inferior to those figured in the size of flower and plant, and in recording the award it should also be stated that the plant is too difficult and uncertain ever to find a place in common cultivation. Shown by Miss Willmott.

Other Novelties.

Helianthus cucumerifolius, var. Stella. Sutton's Brilliant.—Under this extraordinary name Messrs. Sutton and Sons showed one of their best derivatives from Prof. Cockerell's Red Sunflower. The flowers are bright yellow, banded with brown on the inner third. The Committee wished to see flowers again.

Verbascum Warley Pearl.—This is a white sport from the beautiful Warley Rose which was recently given an Award of Merit. It shows the same branching habit, and should prove a fine garden plant.

Primula pseudo-capitata.—This fine Primula was sent by Messrs. Bees, but on arrival it was

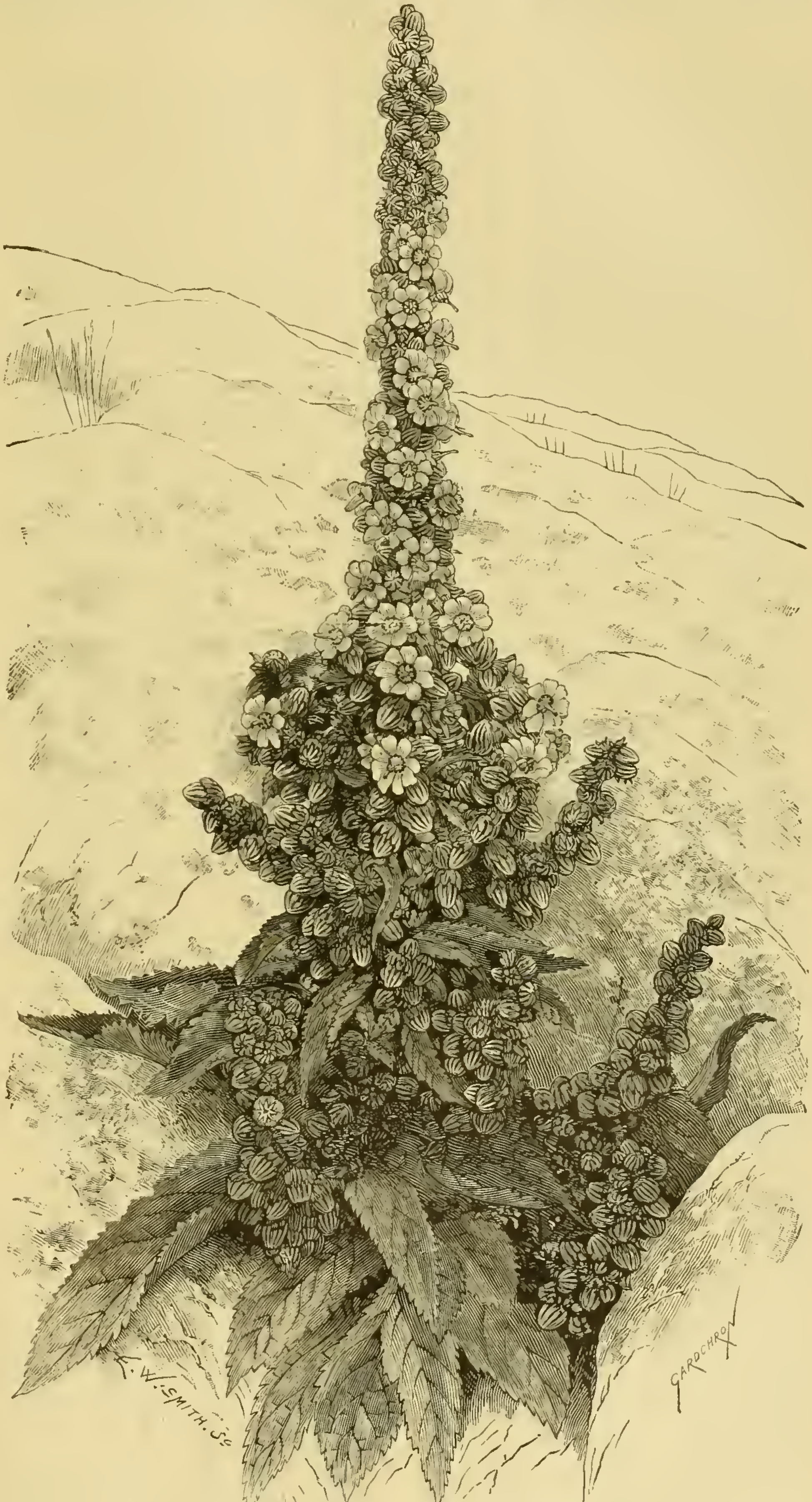


Fig. 23.—Michauxia tchihatcheffii: flowers white.
(See Floral Committee's Awards.)

found to be damaged. It is a better perennial than capitata, and shows stouter foliage and stronger dwarfer spikes. If less graceful than the old form, its better garden qualities will no doubt bring it to the front.

GENERAL EXHIBITS.

The largest floral exhibit was a collection of border Phloxes shown by Messrs. H. J. Jones, Ltd., Ryecroft Nurseries, Lewisham. This imposing display occupied a space of 600 square feet, and included 400 plants in 100 distinct varieties. In the centre were batches of the fine white variety, Frau Ant. Buchner, and the pale, salmon-coloured Elizabeth Campbell; whilst in the general group were such beautiful sorts as Mrs. R. C. Pulling, pink (new); Rijnstroom, rosy-pink; Mrs. W. Wraite, pale mauve and white; Boule de Feu, glowing scarlet; and Henry Murger, white, with carmine eye. (Gold Medal.)

Mr. W. Wells, Junr., Merstham, also exhibited varieties of Phlox decussata.

Messrs. H. B. May and Sons, Edmonton, exhibited, as a flower group, a collection of greenhouse and British Ferns, for which a Silver-gilt Flora Medal was awarded. The plants were exceptionally healthy, and included Adiantum Veitchii, with young, rose-tinted fronds, Blechnum corcovadense roseum, Davallia tenuifolia Veitchii, D. fijiensis plumosus, Pteris Childsii, a finely-crested Fern, and Doryopteris (Pteris) ludens, with handsome, hastate fronds. The best of our native species were Athyrium filix femina plumosum, Polystichum aculeatum gracillimum, Scolopendrium vulgare grandiceps and Osmunda regalis cristata. (Silver-gilt Flora Medal.)

Mr. L. R. Russell, Richmond, Surrey, staged an imposing group of Ivies, with a batch of the showy variegated-leaved Aralia mandschurica as a centre-piece. (Silver Banksian Medal.)

Col. the Rt. Hon. Mark Lockwood, Romford (gr. Mr. Cradduck), filled a large table with Fuchsias, for which a Silver-gilt Banksian Medal was awarded.

Messrs. James Veitch and Sons, Ltd., Feltham, showed plants of Solanum Wendlandii, each about 6 feet high, and bearing large heads of the pretty lavender-coloured flowers. (Silver Banksian Medal.)

Messrs. Stuart Low and Co., Enfield, also exhibited a batch of Solanum Wendlandii, as tall, well-flowered plants.

Messrs. W. Cutbush and Son, Highgate, had an extensive exhibit of Gloxinias, in batches of distinct colours.

Mr. James Douglas, Great Bookham, Surrey, showed fine border Carnations, the blooms—the best in the Hall—being splendid in form, of large size, and of handsome colours. The gem of the collection was Miss Rose Josephs, the colour old-rose; others of superior merit were Cecilia, yellow; Innocence, faint blush; Bookham Clove, Robert Berkeley, a scarlet variety of magnificent form and large size; Bookham White, and Evangeline, lavender-puce. (Silver Flora Medal.)

Sir D. Gooch, Bart., Hylands Park, Chelmsford (gr. Mr. Heath), exhibited choice blooms of Souvenir de la Malmaison and Tree Carnations, the old Princess of Wales and the clove coloured Maggie Hodgson being the more conspicuous varieties. (Silver-gilt Banksian Medal.)

Mr. C. Engelmann, Saffron Walden, showed Perpetual-flowering Carnations, of such sterling varieties as Carola, My Rose, White Perfection, Calypso and Mrs. C. W. Ward. (Silver Banksian Medal.)

Mr. John Box, Lindfield, Sussex, exhibited 45 varieties of Sweet Peas, decorated with sprays of Statice. The varieties included James Box, salmon; Mrs. Cuthbertson, blush; Agricola, pale mauve; Nettie Jenkins, lavender; Illuminator, rosy-cerise; Ella Box, white, flaked with lavender; and Mrs. Gibbs Box, pink. (Silver-gilt Banksian Medal.)

Mr Henry Eckford, Wem, Shropshire, also exhibited Sweet Peas. The variety Clematis is a fine shade of blue, and has purplish standards. Eckford's New Blue is also a striking variety. Others that were especially good are Duplex Spencer, King Manoel, maroon; Florence Nightingale and Colleen, a pretty bi-coloured flower, the standards being rose-pink colour and the wings much paler. (Silver Flora Medal.)

Messrs. B. R. Cant and Sons, Colchester, were awarded a Silver Flora Medal for Roses.

Messrs. W. Kordes and Krause, Witley, showed a small collection of Roses, including fine blooms of the variety Mme. Edouard Herriot.

Rev. J. H. Pemberton, Havering-atte-Bower, Essex, showed his white, seedling Climbing Rose, named Pemberton's White Rambler.

Mr. Amos Perry, Enfield, showed hardy flowers as a cool-looking corner group, with pans of Nymphaeas along the front. The exhibit was rich in Lilies, of which we noticed Lilium odorum, L. excelsum, L. canadense flavum, L. pardalinum and L. Humboldtii; also Japanese Irises, fine Phloxes, Delphiniums, the giant Armeria plantaginea gigantea, with pink flowers; Gaillardias, Coreopsis tinctoria and numerous other fine border flowers. (Silver Banksian Medal.)

Messrs. Kelway and Son, Langport, Somerset, filled a long table with Gladioli. This handsome exhibit was composed of exceptionally fine spikes of large, brilliantly-coloured varieties, amongst which we noticed Henry Drummond and Pioneer, two choice crimson sorts; Christine Margaret Kelway, soft shades of pink and rose, with yellow in the throat, and deep rose-coloured lines; His Grace, rosy-red petals, the yellow throat marked with crimson; Lady Montague, a pale variety, with big blotches of crimson-red on the two lower segments; La Nuit, purplish blue; and hybrids of G. primulinus, some with apricot and rose tinting. (Silver-gilt Banksian Medal.)

Mrs. Atkinson, Locksheath, near Southampton, exhibited a few spikes of Gladioli, the most striking variety being Orby, a scarlet flower striped with maroon.

Hardy flowers were also exhibited by the Guildford Hardy Plant Nursery; Mr. Maurice Prichard, Christchurch, Hampshire (Silver Banksian Medal); Messrs. T. S. Ware, Ltd., Feltham; and Messrs. Phillips and Taylor, Bracknell, Berkshire (Bronze Banksian Medal.)

Mr. Howard H. Crane, Highgate, showed Violas and his race of miniature flowered varieties known as Violettas. Of these latter a selection includes Eileen, mauve, with yellow eye; Rock Orange, rich golden-yellow; Rock Lemon; Primrose Beauty, Purity, Cecilia, purplish-blue; Cynthia, pale lavender; and Estelle, the smallest of all, white, with suffusion of gold on the lower petal. (Silver Banksian Medal.)

Messrs. Carter Page and Co., London Wall, exhibited pans of Violas in numerous varieties. (Silver Banksian Medal.)

Violas were also shown by Mr. E. A. Turner, Bush Hill Park, Enfield.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, S. W. Flory, W. H. White, E. H. Davidson, J. E. Shill, W. H. Hatcher, W. Cobb, T. Armstrong, C. H. Curtis, R. A. Rolfe, C. J. Lucas, Sir Harry J. Veitch, and Sir Jeremiah Colman, Bart.

Only two important groups were staged, but the show was above the average for the season, and specially interesting in distinct novelties, three of which secured First-class Certificates and one an Award of Merit.

AWARDS.

First-Class Certificates.

Miltonia vexillaria The Rev. W. Wilks (see fig. 24), from J. Gurney Fowler, Esq., Brackenhurst, Pembury, Tunbridge Wells (gr. Mr. J. Davis). The largest and best-shaped light form of Miltonia vexillaria and of extraordinary substance. In tint it is unique, being of a delicate Peach-blossom, the veining slightly darker and the petals bearing a slight violet flush at their bases. The broad labellum has a yellow disc on white ground, and three thin lines of red in front of the crest. It was raised from the varieties gigantea and Queen Alexandra.

Odontonia Charlesworthii (*Odm. Uro-Skinneri* × *M. vexillaria*), from Messrs. Charlesworth and Co., Haywards Heath. This is a great triumph for the hybridiser, being a product commonly designated by experts "a gem." The plant is intermediate in growth between the parents, but well shows O. Uro-Skinneri, which bore the seed. The erect inflorescence bore four flowers flatly arranged as in M. vexillaria, but in texture and markings like the Odontoglossum, although enlarged to more than twice the size. The sepals and broader petals are blotched with reddish purple, the white ground showing through slightly in the central part of the petals and margin, and more so in the sepals. The lip is formed after M. vexillaria, but the broad front is coloured the rich purplish-rose seen in the best forms of O. Uro-Skinneri as spotting. The crest is yellow with a white base, having beautiful ruby-red markings.

Odontoglossum percultum King George (*Rolfeae* × *ardentissimum*), from F. Mentieth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth). The fine form which secured an Award of Merit, July 2, 1912, but now greatly improved, especially in the size of flowers, which are white with broad transverse blotches of violet-purple. The spike bore 12 blooms.

Award of Merit.

Brasso-Cattleya Ilene (*B.-C. Madame Chas. Maron* × *C. Dowiana*), from Baron Bruno Schroder, The Dell, Englefield Green (gr. Mr. J. E. Shill). A superb flower of great size, the second crossing with C. Dowiana giving it broader proportions while still retaining the fringed lip. The sepals and petals are coloured lilac-rose. The lip is of rose colour, with a darker ray of purple in the centre and a large yellow disc.

Cultural Commendation.

To J. Gurney Fowler, Esq., Brackenhurst, Pembury (gr. Mr. J. Davis), for a superbly-grown, compact specimen of Cattleya Warscewiczii with six spikes bearing together twenty-three richly-coloured flowers (see fig. 25).

To Elizabeth Lady Lawrence, Burford (gr. Mr. W. H. White), for a fine plant of Odontoglossum Pescatorei with five branched spikes giving a perfect head of white flowers.

GENERAL EXHIBITS.

F. Mentieth Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth), exhibited the new Odontoglossum Uro-anthum (Kegeljani polyxanthum × Uro-Skinneri). The sepals and petals are yellowish-green, the sepals barred and the petals spotted with chocolate-purple. The white lip has a dark rose base and bands of rose spots.

E. R. Ashton, Esq., Broadlands, Tunbridge Wells, showed Odontioda Hemptinneana Broadlands variety. The sepals and petals are white, with orange-red spots in the centre, the broad margin being rose-coloured; and Sophro-Laelio-Cattleya Sibyl, yellow tinged with purple, and having a red lip.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), showed Odontoglossum Snowflake. The segments are spotted with purple, the margins being white.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Banksian Medal for an interesting group of hybrids and rare species, among the latter being the original form of Stanhopea tigrina, Masdevallia Gargantua, M. calura, M. simula, Anguloa eburnea, Ancistrochilus Thompsonianus, Coelogyne Mooreana, C. sulphurea, Ornithochilus fuscus, Nanodes Medusae, Physosiphon Loddigesii, Angraecum O'Brienianum, with a spray of fragrant white flowers; A. Grantii, like a small form of A. Kotschyi, Vanda Parishii, and Bulbophyllum densiflorum.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group of showy Orchids, among which were noted good Oncidium macranthum, O. amictum, Vanda teres, Cattleya Warscewiczii, one form without the usual yellow disc being near to the variety saturata: C. Mossiae Reineckiana Snowflake, C. Rex, C. Gaskelliana alba, Odontioda Charlesworthii, some pretty Odontoglossum, Anguloa Clowesii, Phalaenopsis amabilis Rimestadiana, Dendrobium Dalhousieanum, D. Dearei, Cirrhopetalum pulchrum, Bulbophyllum Lobbii Colossa and Epidendrum nemorale.

Messrs. Flory and Black, Slough, showed a small group containing three of the fine scarlet

Disa grandiflora raised in their nursery, a good specimen of Dendrobium acuminatum, with a long spike of pretty rose-pink coloured flowers and five plants of the pure white Cattleya Gaskelliana alba.

Messrs. J. and A. McBean, Cooksbridge, staged a group in which were two deep-red forms of Odontioda Charlesworthii, good examples of their strain; O. Thwaitesii, a large-flowered form of the pure white Dendrobium Dearei of the same small importation as that known as McBean's variety; D. Sanderae; some good Odontoglossums; and Laelio-Cattleya Aphrodite, with very fine, violet-purple coloured lip.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the chair), Messrs. J. Willard, A. Grubb, A. Bullock, Geo. Kelf, Wm. Pope, Horace J. Wright, Owen Thomas, C. G. A. Nix and J. Davis.

The most important exhibit in this section was a collection of fruit shown by Maldwin Drummond, Esq., Fawley, Southampton (gr. Mr. Lewis Smith). There were excellent bunches of Canon Hall Muscat Grapes; small-berried, but well finished Black Hamburgh Grapes; excellent Beauty of Bath Apples, and Plums, Currants, Figs, Nectarines, Gooseberries, Loganberries, Raspberries, Peaches, Apples and Pears, together with pot fruit trees. (Silver-gilt Knightian Medal.)

Messrs. W. Paul and Son, Waltham Cross, showed pot fruit trees, including Figs, Cherries, Gooseberries, Plums, Nectarines, and Apricots. The Apricots, trained as dwarf standards, were splendidly fruited. (Silver Knightian Medal.)

Eric Hambro, Esq., Hayes, Kent (gr. Mr. C. Davis) was awarded a Bronze Knightian Medal for a collection of fruit, including Black, White and Red Currants, Raspberries, Strawberries, Cherries and Plums.

PERPETUAL-FLOWERING CARNATION.

The following new varieties have been entered upon the society's register during the half-year ended June 30:—

Ivy Seely.—Bright sabnon pink seedling from Marmion.

Fidelio.—Burgundy red seedling from Mrs. H. Burnett × Mikado. These two raised by Mrs. Seely, Wingerworth Hall, Chesterfield.

Princess of Wales. — Perpetual-flowering "Malmaison," similar to Princess of Wales, but constant in habit.

Mrs. Mackay Edgar.—Pearl rosy pink.

Countess of Pembroke.—Art red. These three raised by Stuart Low and Co.

Mrs. J. E. Lowe.—Salmon-pink. Raised by Mr. J. E. Lowe, Warwick.

Red Benora.—Dark scarlet-red sport from Benora. Raised by Wm. Wells and Co.

T. A. Weston, hon. sec.

CONFERENCE ON SWEET PEAS AT THE WHITE CITY.

July 8.—Mr. Leonard G. Sutton, who presided at the Sweet Pea Conference at the White City, Shepherd's Bush, on this date, spoke of the great bond of interest which the Sweet Pea provides between the two great nations which are associated in the exhibition being held in the grounds, and voiced the general regret that Mr. W. Atlee Burpee was not present to read his expected paper on "The Development of the Sweet Pea in America." It was also regretted that on account of the recent unfavourable weather and the many flower shows which are being held throughout the country, there was no exhibit of Sweet Peas in the building; but he was glad to be able to introduce Mr. Chas. H. Curtis, who would read his paper on "One Hundred Years' Progress with the Sweet Pea in England."

Mr. Curtis first briefly outlined the history of the Sweet Pea, commencing with its introduction over 200 years ago, when Father Francis Cupani, of Naples, sent to his friend Dr. Uvedale, at Enfield, a few seeds of a purple climbing plant, Lathyrus odoratus, which was the parent of all the many varieties now cultivated. In 1768 there were only three varieties; the original, which had dark purple standards and blue wings; Painted Lady, which bore pink standards and a white keel; and a pure white variety. The greatest improvements in the flower have been effected within the past forty years, since when the varieties have shown a steady increase in size and improved colours. The advent of the Spencer, varieties in 1900 practically recreated the Sweet Pea, and we now have immensely improved sorts. Mention was made of the improved methods of cultivation, particularly for exhibition and for market purposes.

The Discussion.

Mr. G. A. Weston and Mr. C. Orchard referred to the reputed crosses between the Sweet Pea and the perennial Pea, and asked if Mr. Curtis knew of the existence of any such hybrids. In reply, the lecturer said that, in common with other persons, he had heard that the annual and perennial Peas had been successfully crossed, but as there was no evidence in the shape of plants to support this they must reserve judgment.

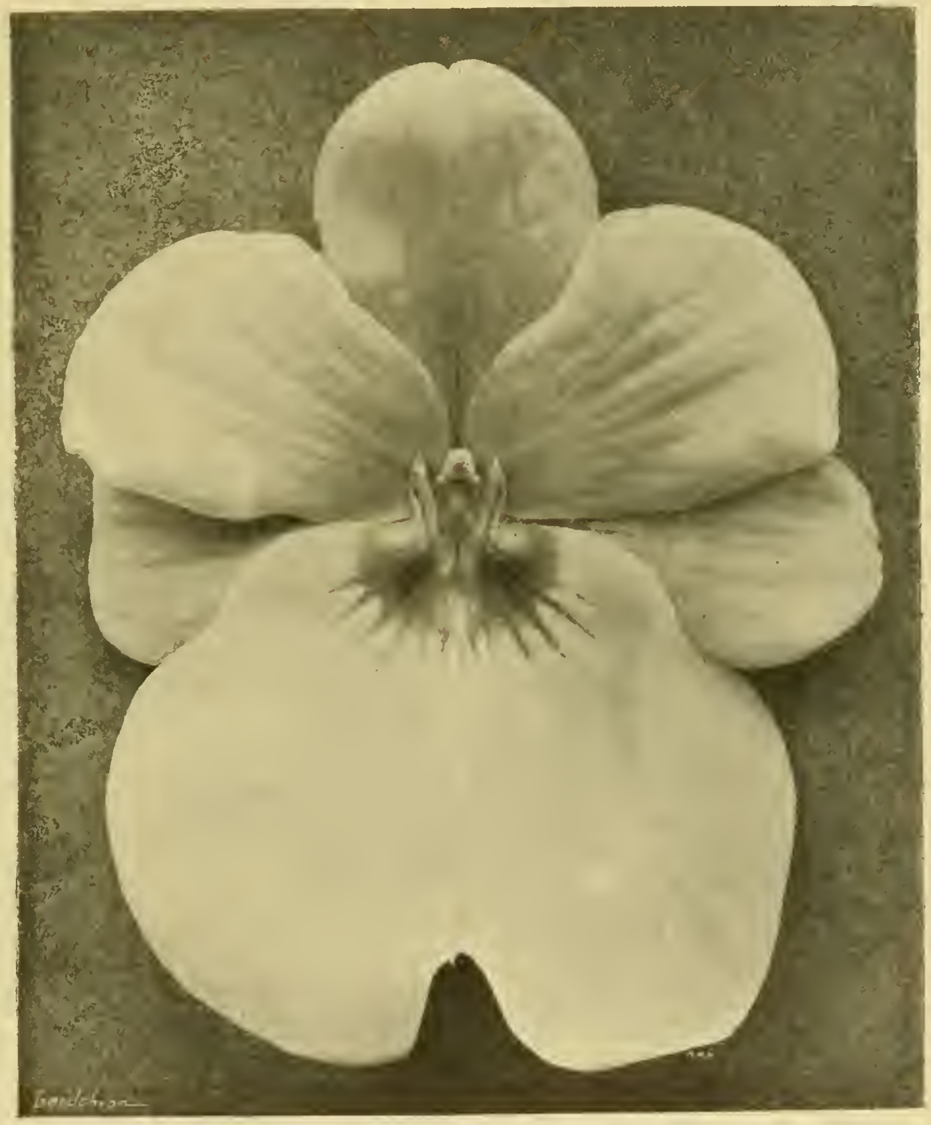


Fig. 24.—Miltonia vexillaria The Rev. W. Wilks: colour, delicate peach-blossom; veining slightly darker.

(R.H.S. First-Class Certificate on July 14, 1914—see p. 60.)

Mr. F. Gardener referred to the fact that the first mauve Sweet Pea produced poor-looking crinkled seeds which it was thought would not be fertile, but experience has shown them to be of high germinative power. Sweet Pea seeds need not be perfectly round; in fact, the mauve and pale lavender coloured varieties almost invariably have badly-shaped seeds.

SOUTHAMPTON HORTICULTURAL.

July 1.—The annual exhibition of the Southampton Royal Horticultural Society was held on the 1st inst., in the interesting grounds attached to South Stoneham House, the residence of Ellen Lady Swaythling. The show was not so large as in some previous years, but the quality of the exhibits was good.

There were four exhibits in the open class for 48 blooms of Roses, distinct. Mr. H. Richards, Warsash Nurseries, Southampton, won the 1st prize with medium-sized blooms of Mrs. E. Mawley, G. Dickson, Mrs. A. Carnegie, the new Irish-raised seedling from Niphetos and Frau Karl Druschki; Mrs. F. Hobbs, Mildred Grant, Hugh Dickson, Earl of Warwick, Lyon, and others; 2nd, Messrs. D. Prior and Sons, Colchester, with larger but less shapely blooms; although those of Mme. Mélanie Soupert, Mrs. A. Coxhead, and Mrs. Charles Russell were unusually good; 3rd, Mr. G. Prince, Longworth, who won the 1st prizes for (1) triplets, and (2) for 12 Tea or Noisette varieties. The varieties Mme. Jules Gravereaux, Bessie Brown, and Mrs. Conway Jones were conspicuous in the class for 12 triplets, whilst Mme. C. Soupert, Maréchal Niel, Mrs. E. Mawley, and White Maman Cochet are a selection of the Teas and Noisettes. The bloom of White Maman Cochet was adjudged the premier bloom in the show.

For 6 blooms of any red or pink varieties, Messrs. D. Prior and Sons secured the leading award easily with highly-coloured blooms of Mrs. A. Coxhead. Mr. Richards followed with G. Dickson in but moderate condition. In a similar class for any one yellow or white variety, Mr. G. Prince won the 1st prize with shapely specimens of Mme. Jules Gravereaux.

Only one exhibitor showed in the class for a meritorious display of representative varieties—Messrs. W. H. Rogers and Son, Bassett, Southampton, who were awarded the 1st award. The varieties Rayon d'Or, Macrantha, British Queen and Avoca were conspicuous.

Baskets of Roses in 3 varieties made a bright display. Messrs. D. **Prior and Sons** won with Rayon d'Or, Mrs. A. Tate, and Mrs. W. J. Grant in fresh condition; 2nd, Mr. J. **Mattock**.

The best dinner-table decoration was arranged by Mrs. E. **Burnett**, Holly Lodge, Westwood, Southampton, who employed Irish Elegance; 2nd, Mrs. **Bealing**, Bassett, Southampton. These two exhibitors exchanged placed in the class for a vase of Roses. W. H. **Myers**, Esq., Swanmore House, Bishops Waltham (gr. Mr. Ellwood) showed the best bowl of Roses.

Local classes were well filled, and the exhibits were of much merit. H. D. **Broughton**, Esq., Beech Hurst, Andover (gr. Mr. H. S. Blackwell), was placed 1st for 18 distinct varieties, and also for 6 triplets with high-quality blooms. Mr. E. P. **Dash**, Gosport, won the Local Amateurs' Challenge Cup, and also the "Munt" Cup in the classes for growers of fewer than 300 plants.

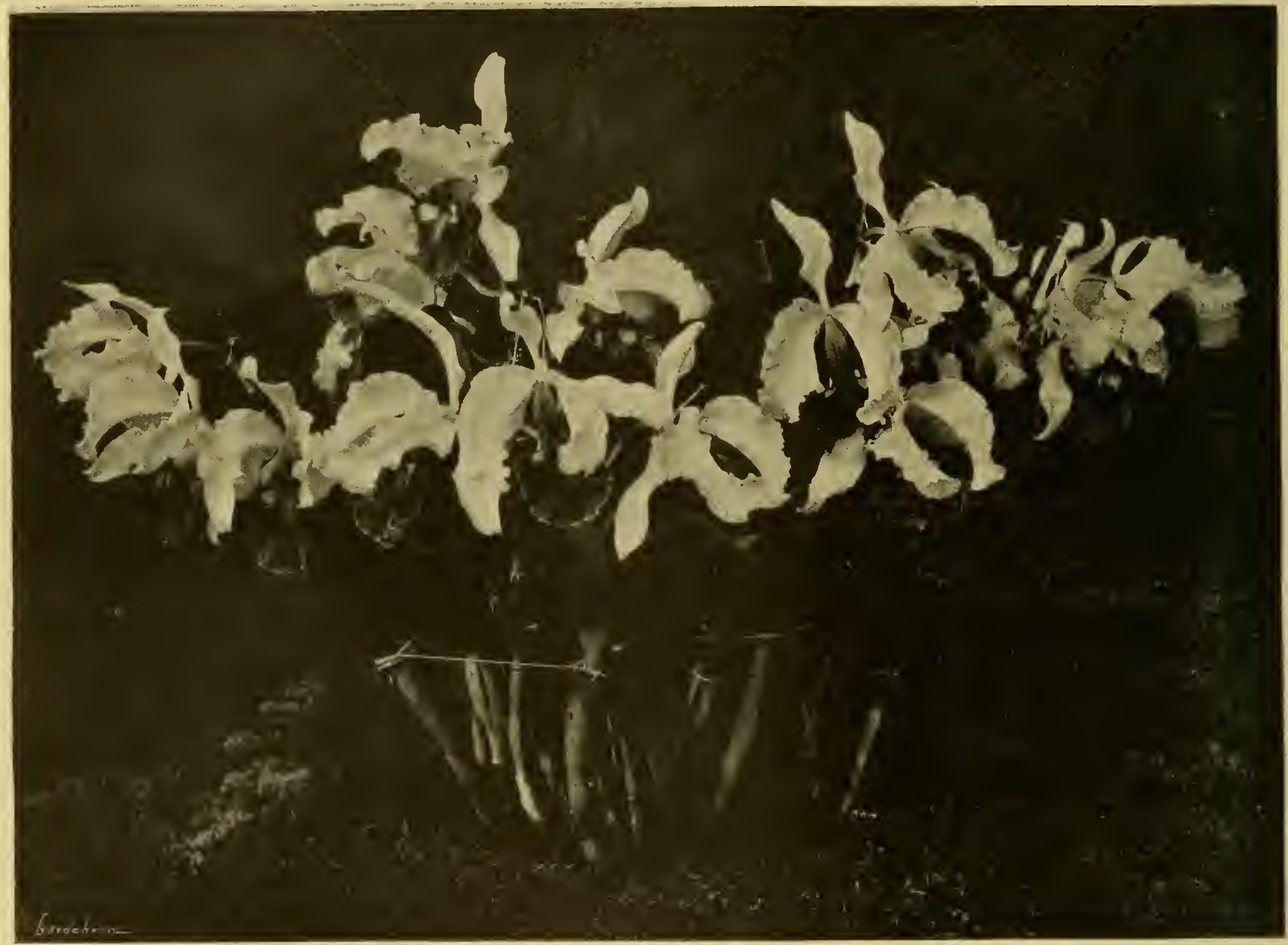


Fig. 25.—Cattleya warscewiczii, as shown by Mr. J. Gurney Fowler.

(R.H.S. Cultural Commendation on Tuesday last—see p. 60.)

Mr. H. E. **Molyneux**, Brantwood, Southampton, had the best 6 bunches of garden or decorative Roses.

Sweet Peas were well shown. Messrs. **Toogood and Sons**, seedsmen, Southampton, provided the prizes in the leading class for 6 bunches. Sir **Randolf Baker**, Ranstone, Derset (gr. Mr. Usher), was easily 1st with a remarkably fine exhibit of such varieties as Lady Evelyn Eyre, Edrom Beauty, Dobbies' Cream, and King Manoel; 2nd, Mr. **Bealing**.

Non-Competitive Exhibits.

Messrs. **Toogood and Sons**, Southampton, showed vegetables, for which a Gold Medal was awarded. Messrs. B. **Ladhams and Son**, Shirley, Southampton, were awarded a Gold Medal for a rockery and hardy border flowers. Messrs. W. H. **Rogers and Son**, Bassett, Southampton, were also awarded a Gold Medal for Shrubs, Roses and Alpines. Mr. **Wills**, Southampton, showed Hydrangea and Caladiums. (Silver Medal.)

LIVERPOOL HORTICULTURAL.

July 9.—The sixth annual Rose and Sweet Pea exhibition, held under the auspices of the above society, took place on the 9th inst. in the local Corn Exchange. The entries were fully up to the average in numbers and the quality was of high merit. Sweet Peas were shown in large quantities and the blooms were of good quality.

For 20 distinct vases of these flowers R. R. **Anderson**, Esq. (gr. Mr. N. Hughes), Birkenhead, won the 1st prize with good spikes of excellent colour, the best varieties being Senator Spenser, Lavender George Herbert, King White and Dorothy Tapscott; 2nd, L. **Cooper**, Esq. (gr. Mr. G. Kitchen), Shropshire.

For 12 vases, distinct varieties, Mr. W. **Bond**, Formby, was placed 1st with excellent spikes of Mrs. Cuthbertson, R. F. Fulton and Maud Holmes; 2nd, L. N. **Brooke**, Esq. (gr. Mr. A. Neubrooke), Heswall.

For 9 vases, Mr. **Harold Aindow**, Formby, led; whilst for 6 varieties Miss **Pollard**, Heswall, was the 1st prize winner. This exhibitor showed good spikes of Sunproof Crimson.

Roses.—For 12 Hybrid Tea Roses, distinct, **James Berry**, Esq. (gr. Mr. J. Orritt), Ormskirk, led with fresh, bright blooms of Avoca, Mme. Mélanie Soupert, and others. For 12 blooms, distinct, J. **Watson Todd**, Esq. (gr. Mr. A. Griffiths), Spital, won in a well contested class; for 6 trusses, distinct, **Herbert Harding**, Esq. (gr. Mr. T. Lambert), Bebington, excelled; the best two vases, 6 blooms in each vase, were shown by J. **Watson Todd**, Esq.; whilst L. N. **Brooke**, Esq., had the best basket and Mr. G. **Cowley** the best bouquet of Roses.

For 12 vases of hardy herbaceous flowers, C. **Comer Wall**, Esq. (gr. Mr. F. Reeves), West Kirby, won the 1st prize with an excellent exhibit, including fine Gaillardias and Gladiolus; for six vases Mr. J. H. **Warriner**, Liscard, was awarded the 1st prize.

For 6 varieties of Carnations, three blooms of each variety, Mr. **Henry Lunt**, Crosby, excelled, and this exhibitor was also placed 1st in the class for 12 blooms, distinct. The best Souvenir de la Malmaison Carnations were shown by Sir W. H. **Tate**, Bart. (gr. Mr. G. Haigh), Wootton.

The best dinner-table decorated with Sweet Peas was arranged by Miss **Newsham**, Ormskirk, with a light, pleasing display of pink flowers. This exhibitor also excelled in the class for a table decorated with other flowers than Sweet Peas, using Rose Fireflame most effectively.

In the amateurs' classes, Mr. H. **Eaton Mercer**, Malpas, and Mr. **John Tapscott**, Heswall, won 1st prizes for Sweet Peas; Mr. **Loo Thomson**, Formby, for 12 and 6 blooms of Roses; Mr. J. **Green**, Neston, for 2 vases of cluster Roses. Mr. A. **Spence**, Upton, and Mr. W. A. **Crippen**, Huyton, showed the best single and double Begonias respectively; Mr. **Henry Lunt** won the 1st prize for Carnations; and Mr. **James Green**, Neston, was placed 1st for hardy herbaceous flowers.

Non-competitive Exhibits.

Gold Medals were awarded to Messrs. **Young and Co.**, Cheltenham, for Carnations; Mr. H. **Middlehurst**, for Sweet Peas; and Messrs. **Bees, Ltd.**, Liverpool, for Roses, Delphiniums and Alpines.

Silver Medals were awarded to **Liverpool Orchid Co.**, Gateacre, for Orchids; Mr. C. A.

Young, West Derby, for Carnations; Messrs. R. P. Ker and Sons, Liverpool, for Hydrangeas, Irises and other flowers; Messrs. Dicksons, Chester, for Roses and hardy herbaceous flowers; and Messrs. W. Rowlands and Co., Liverpool, for Roses.

ELSTREE HORTICULTURAL.

July 9.—The annual show of the above society was, by the kind permission of the president, the Hon. Vicary Gibbs, held in the grounds of Aldenham House, on Wednesday, the 9th inst. Unfortunately the weather in the morning was showery, but towards mid-day it cleared, and the attendance was satisfactory. The number of entries was nearly double that of any preceding year. The exhibits were arranged in three marquees.

In the competitive classes Messrs. F. Cant and Co., Colchester, were placed 1st for a display of Roses; this firm having won the cup offered in this class three times in succession, it now becomes their property. In a class for Roses open only to amateurs the 1st prize and Cup was won worthily with magnificent blooms by J. B. B. Wellington, Esq., of Elstree (gr. Mr. J. Allen); 2nd, K. Edgcumb, Esq. (gr. Mr W. Eggleton). Sweet Peas were shown grandly by Lord North (gr. Mr. E. Janes), who was awarded the 1st prize for these flowers; 2nd, Sir Chas. Haddon (gr. Mr. O. Hales), who also staged remarkably fine flowers; 3rd, G. M. Morwood, Esq. E. N. Kent, Esq. (gr. Mr. A. Clements), was successful in the class for hardy herbaceous flowers. Prizes were offered by Messrs. Sutton and Sons for a collection of vegetables, and the 1st prize was won by Colonel E. Pearce, followed closely by K. Edgcumb, Esq. The last-named exhibitor showed the best Begonias; 2nd, Colonel Pearce. G. W. Atkins, Esq. (gr. Mr. H. Lawrence), was placed 1st for Gloxinias. For six foliage plants K. Edgcumb, Esq., G. W. Atkins, Esq., and J. B. B. Wellington, Esq., were placed in the order of their names. Table decorations were largely shown. The 1st prize was awarded to Mrs. Attenborough, who had a charming arrangement of Carnations. The Amateur and Cottagers' classes were well filled, the produce being of very high excellence.

One of the large tents was principally occupied with honorary exhibits. Mr. Amos Perry, Enfield, staged a large collection of Delphiniums and other hardy plants. Messrs. Barr and Son, London, showed pigmy trees. Carnations were shown splendidly by Messrs. Cutbush and Son, Highgate. Messrs. F. Cant and Co., Colchester, showed Roses; and another striking feature was a grand display of Sweet Peas exhibited by Lord North, Banbury (gr. Mr. E. Janes). Mr. Henry Newman, Watford, exhibited a rock garden and Pinks. Messrs. Thompson and Charman, Bushey, showed hardy herbaceous flowers and Alpines. Messrs. Gleeson and Co., Watford, showed floral designs. Mr. Allan Porter, Horeham Wood, exhibited Delphiniums. The Hon. Vicary Gibbs (gr. Mr. E. Beckett) contributed a splendid collection of vegetables, including more than one hundred dishes, for which a large Gold Medal was awarded.

REIGATE ROSE AND SWEET PEA.

July 1.—This annual exhibition was held in the beautiful grounds of Brokes Lodge on the 1st inst. The classes generally were well filled, and competition was, on the whole, keen. The Challenge Cup offered for 48 distinct varieties of Roses (open to nurserymen) was won by Messrs. B. Cant and Sons, Colchester. In the class for 24 distinct varieties Messrs. J. Burrell and Co., Cambridge, secured the 1st prize with good blooms of Coronation, Bessie Brown, Ulster, Mabel Drew, Lady Barham, Earl of Gosford, White Maman Cochet and others; 2nd, Mr. Henry Drew, Longworth. Mr. Drew led in the class for 18 distinct varieties, Teas or Noisettes, notable blooms in his collection being Molly S. Crawford, Mme. Jules Gravereaux, Mrs. H. Taylor, Nita Weldon, Mrs. Foley Hobbs, Mme. L. Constantin, Bridesmaid and Maman Cochet; 2nd, Mr. John Mattock. In the class for 12 garden Roses, distinct, Messrs. Wm. Spooner and Sons, Woking, were successful, with such varieties as Rayon d'Or, Mrs. Aaron Ward, Excelsa, Philadelphia Rambler, The Farquhar, and Doris; 2nd, Mr. John Mattock.

In the classes for amateurs, a Silver Cup was offered for 24 varieties, distinct, and was won by Mr. H. L. Wettern, with a grand collection including a magnificent bloom of Avoca, which was awarded the Silver Medal offered for the best bloom in the division. Mr. Charles Lamplough showed best in the class for 18 blooms, distinct varieties, whilst the same exhibitor won the Challenge Cup offered for twelve varieties, distinct, open to growers of fewer than 1,000 plants.

In the Open Classes for Sweet Peas, the handsome Challenge Cup offered for 12 bunches of distinct varieties was won by Mr. E. R. Janes, his varieties including Hercules, Dobbie's Cream, Edrom Beauty, E. R. Janes, King Manoel, Edith Taylor, Audrey Crier, and Lady E. Eyre; 2nd, Mr. F. W. Franks.

For 2 bunches of white Sweet Peas, Mr. Janes again led, staging White Queen. Mr. A. E. Usher was placed 1st for 2 bunches of a scarlet or crimson variety with The Squire and King Edward Spencer, whilst for 2 bunches of salmon shades, orange-pink or orange-scarlet, Mr. F. W. Franks was successful with Orange Perfection and Thos. Stevenson. The Premier Award for 2 bunches of pink or cream-pink varieties was won by Mr. Janes with Doris Usher and Hercules.

Non-competitive exhibits included displays of Roses by Mr. Elisha J. Hicks, Twyford, and Messrs. J. Cheal and Co., Crawley. Messrs. Wells and Co., Merstham, showed hardy flowers, whilst a magnificent exhibit of Sweet Peas was staged by Mr. Jas. Box, Lindfield, together with one of English Irises, Water Lilies, Delphiniums and other hardy flowers. This exhibitor was awarded a Silver Bowl for the most meritorious non-competitive exhibit.

MANCHESTER ROYAL BOTANICAL AND HORTICULTURAL.

July 10 and 11.—The Rose Show and Summer Exhibition of this Society was held in the Botanical Gardens, Old Trafford, on the 10th and 11th inst. The nurserymen's classes were very poorly filled, and it is to be regretted that those who had entered but were unable to stage exhibits had not sent an intimation to that effect to the curator.

Roses.

Nurserymen's Classes.—There was only one exhibit in the class for 60 blooms of Roses, distinct. The exhibitors were Messrs. G. and W. H. Burch, Peterborough, who were awarded the 1st prize for moderate blooms, the best being Horace Vernet (excellent colour), Lyon Rose, Mrs. Stewart Clark, and George Dickson. This firm also excelled in the class for 36 single trusses, distinct; 2nd, Mr. W. Brown, Peterborough. Messrs. Burch also led in the class for 12 Teas or Noisettes, Mr. Brown being 2nd. This exhibitor won in the class for 12 blooms of any crimson variety with George Dickson, the finest specimen in this exhibit being adjudged the premier bloom of H.P. or H.T. in the show. Mr. Brown was also the 1st prize winner in the class for 12 blooms of any white or yellow variety.

Amateurs' Classes.—For 24 blooms, distinct, Mr. E. G. Herbert, Acton Bridge, led with blooms of fair quality; 2nd, Mr. A. T. Hogg, Altrincham. For 12 blooms, distinct, Mr. J. B. Sawby, Sandiway, was placed 1st.

In the district section the 1st prize winners were Mr. G. H. Herbert, for 24 trusses, and Mr. H. Holt, Knutsford, for 12 trusses.

Sweet Peas.—In the class for not fewer than 50 nor more than 100 vases, Mr. R. Wright, of Formby, was worthily awarded the 1st prize with fine blooms, notable for their freshness and large size; the centre of the stand was occupied by a huge vase of the new variety Royal Purple, a flower of fine substance and colour intensified by the surrounding lighter colours.

For 12 varieties in a class open only to amateurs Mr. J. S. Procter, Altrincham, and Mr. S. S. Rigg were placed 1st and 2nd respectively. For a collection of not fewer than 25 varieties Mr. Rigg won the 1st prize.

For 10 stove or greenhouse plants in bloom Messrs. J. Cypher and Sons, Cheltenham, excelled, as on former occasions; and they also showed the best 6 fine foliage plants.

For a group of miscellaneous plants, in and out of bloom, this Cheltenham firm had a charming array, artistically arranged. Highly-coloured Crotons and numerous choice Orchids were features of this fine exhibit. 2nd, Mr. W. A. Holmes; 3rd, Mr. W. G. Garner.

Non-competitive Exhibits. — Gold Medals were awarded to Mr. A. J. A. Bruce, Chorlton-cum-Hardy, for Sarracenias and other plants; W. H. Lee, Esq. (gr. Mr. G. Morbey), Heywood, for a collection of fruit trees; Messrs. A. Dickson and Sons, Newtownards, Belfast, for Sweet Peas; Messrs. Caldwell and Sons, Knutsford, for hardy herbaceous flowers and Roses.

Violas and Pansies were shown by Mr. R. W. Spicer, Whalley Bridge.

LA SOCIÉTÉ FRANCAISE D'HORTICULTURE DE LONDRES.

July 11.—By the kind invitation of Mr. N. N. Sherwood, the members of the French Gardeners' Society of London paid a visit to his charming residence at Kelvedon on the 11th inst. The party, consisting of about 120, left Liverpool Street Station at 11.20 a.m. They were received at Kelvedon by Mr. Sherwood, who entertained the visitors at luncheon. The afternoon was spent in visiting the gardens and pleasure grounds, and in inspecting the neighbouring trial grounds of Messrs. Hurst and Son. At 5 p.m. tea was served on the lawn. The house is a delightful specimen of old English architecture, which has been skilfully and artistically restored in keeping with the original design. The old oak panelling and woodwork is peculiarly interesting, and the house forms an ideal country residence. Mr. Geo. Schneider, on behalf of the members, thanked Mr. Sherwood for his hospitality. The members of the "Hortus Lodge" present also joined in the expressions of thanks.

LAW NOTE.

AMERICAN GOOSEBERRY MILDEW.

On July 8 four Kentish fruit-growers were summoned at Bow Street for causing to be exposed for sale in Covent Garden Market Gooseberries affected with the American Gooseberry mildew.

In the case of one of the defendants, the magistrate was not satisfied that he had knowingly consigned the diseased fruit, and the summons was dismissed upon payment of 14s. costs.

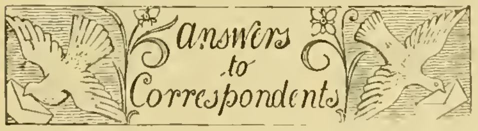
The others were fined 40s. and 14s. costs, 20s. and 28s. costs, and 40s. and 16s. costs respectively.

The defendants in each case stated that every precaution had been taken to prevent diseased fruit being sent to market.

Obituary.

George Cuthbert.—The announcement in our last issue of the death of Mr. George Cuthbert, senior, must have been received with deep sorrow and regret by a large circle of friends in the horticultural world, so widely was he known, and so greatly respected for his amiability, generosity, and high character. Since he met with a bad accident in 1905, Mr. Cuthbert had not enjoyed the best of health, but it was only after his return from a recent visit to Hastings that he was taken seriously ill and was obliged to undergo an operation for an internal complaint. Mr. Cuthbert was born on July 21, 1839, and was a nephew of the Richard Cuthbert who founded the business at Southgate in 1797. He commenced his business career at Messrs. Paul and Son's Old Nursery at Cheshunt. From there he went to Messrs. Sutton and Sons, Reading; thence to the now extinct firm of Messrs. Jacob Wrench and Sons, London Bridge; and about 1865 became manager of the seed department of Messrs. John and Charles Lee's famous nursery at Hammersmith, on the site now occupied by Olympia.

He stayed with Messrs. Lee for ten years, and in 1875 joined his uncle George at Southgate. On the death of the latter in 1903, the business came into Mr. G. Cuthbert's possession, and he took his sons, George Henry and Richard, into partnership, his younger son James entering the firm in the following year. As before stated, the business at Southgate was commenced in 1797 by Richard Cuthbert, who had previously been gardener at Hamilton Palace, in Lanarkshire, and Luton Hoo, in Bedfordshire, and who was a few years later joined by his nephew George. In the early days of the business the special feature of the nursery was the cultivation of the old double white Camellia and Fielder's White Azalea for cut flowers, and the nursery still contains a few grand old specimens of both plants, growing in the houses in which they were originally planted long before the duty was taken off glass or the era of tight glazing and heating by hot water commenced. For about the first half of the last century the Camellia had a great vogue, and the cut blooms of the old double white sold for excellent prices in Covent Garden market. The Camellia having gone out of fashion. the firm has long since specialised in the forcing of shrubs and bulbs, and their many triumphs with these subjects at the London exhibitions in recent years have earned for them high repute. Especially have they been successful in the cultivation and introduction of fine varieties of Rhododendron sinense (Azalea mollis), of which the varieties George Cuthbert and Ellen Cuthbert both obtained the Award of Merit of the R.H.S. Mr. Cuthbert was one of the oldest subscribers to the Gardeners' Royal Benevolent Institution, and he served for several years on the committee of the Royal Gardeners' Orphan Fund, being succeeded by his eldest son when, a few years ago, advancing years and indifferent health compelled him to resign. Of both these institutions Mr. Cuthbert was a constant and generous supporter. The funeral took place at Southgate on Saturday last. in the presence of the members of the family, all the employees of the firm, and a number of friends. The business will be continued by the sons under the old style and title of R. and G. Cuthbert.



Answers to Correspondents

Asphalting Garden Walks : *Asphalt.* To asphalt garden paths use one measure of tar to two measures of any one of the following materials, which you may find it most convenient to use :—Cinders, gravel, stone or granite chippings, or shingle. Chippings or shingle would answer your purpose best. Make a hole in the centre of the material used, and pour the tar into it and mix to the consistency of mortar. Then lay it on the paths previously prepared for its reception to the thickness of three or four inches. Make this level and insert therein a few sandstones, as you suggest, before the material sets ; following with a light, even covering of sand, preferably silver-sand. This will give a good finish to the work. Finally, pass a light roller over the walks thus made before the materials have become quite set. The tar will not require being boiled this weather.

Bottled Peas : *J. E. D.* Air must have got into the jars, or perhaps they were not absolutely dry. Another possibility is that they were not stored in a cool, dry place. The usual plan is to put the peas into dry, wide-mouthed bottles, shaking them down till they are packed in as closely as can be. Wind some hay round the lower part of each bottle, then stand them all upright in a large saucepan with cold water enough to reach to the necks. Bring the water to the boil and keep it boiling for two hours. Cork the bottles as soon as possible and leave them in the water till it is cold. Cover the corks entirely with sealing-wax or with melted paraffin, to exclude all air and store in a cool, dry place. After sealing the bottles thoroughly bury them in a dry part of the garden. The peas, if all air is excluded, will then keep about five months.

Bulbils in Leaf Axils of Tulip : *W. H. D.* Although not common in this genus it is very general for bulbous monocotyledons (Lilies, etc.) to produce bulbils in the axils of their leaves. It may well be that the hot, dry season has induced the formation of axillary bulbils in the May-flowering Tulips. Inasmuch as a bulb is nothing more than a bud in which the leaves have become fleshy, there is nothing very remarkable in the appearance of aerial bulbs in plants which grow from a bulb A parallel case is presented by the Potato, which upon occasion produces axillary tubers on its aerial stems.

Carnations : *N. H. P.* We do not undertake to name varieties of Carnations or other florists' flowers, and should advise you to send the flowers to a grower, who can compare them with others in his collection.

Clematis Failing : *W. H. W.* The trouble is not due to disease, the cultural conditions are at fault.

Clover on Lawn : *J. P. and Son.* Dress the lawn with sulphate of ammonia, which will cause the grass to grow so luxuriantly as in time to crowd out the clover.

Conifers Diseased : *A. D. W* The fungus Fomes acinosus is present on the roots. In all probability a fungus is present at the collar of the Cedar tree.

Cucumbers Diseased : *E. G.* The trouble is due to Cucumber mildew. Spray the plants with liver of sulphur at the rate of ½ oz. in 2 gallons of water. If you are using the Bordeaux mixture for other purposes that specific may be used for the Cucumbers at half the usual strength.

Cucumbers Spotted : *T. G. W.* The plants are affected with Cucumber leaf-spot. If there is at present no fruit on the plants they should be sprayed with the Bordeaux mixture ; but if fruits are present, use liver of sulphur instead.

Fern Unhealthy : *Mid.* The injury is caused by eelworms. The plants cannot be cured, and should be burned and the soil and pots sterilised thoroughly.

Grapes Diseased : *E. J. T.* The berries are affected with "spot" disease, caused by the fungus Gloeosporium ampelophagum. Dredge the vines with flowers of sulphur at intervals of ten days. On the second occasion add a small quantity of quicklime, and increase the quantity on each successive application, but always use a little more sulphur than lime. Next winter, when the vine is resting, drench the rod with a solution of sulphate of iron. Collect and burn all diseased leaves, shoots and fruit.

Grapes Failing to Swell : *A. J.* We have carefully examined the specimens sent, but can find no trace of any disease which could account for the berries failing to swell. We should be inclined to attribute the trouble to some error in culture or improper atmospheric conditions.

Ivy-Leaved Pelargoniums : *T. E. W.* The blisters on the leaves are caused by insect punctures. Too much moisture at the root is the cause of yellowing of the foliage.

Melons Dying : *W. H. Y.* The plants are attacked by "Sleeping" disease, and the soil is infected with the fungus. Specimens that are affected with sleeping disease cannot be cured, for the fungus enters the roots and develops with the plants. Take the precaution to sterilise the soil in which the crop was grown.

Names of Plants : *A. C. D.* Periploca graeca, Lathyrus sativus.—*A. T. H.* The Roses were withered ; 6, Iris Monspur ; 7, I. aurea.—*B. J. Sturry.* 1, Periploca graeca ; 2, Phillyraea latifolia.—*J. J. and Son.* 1, Agrostis sp. (probably) ; 2, Agrostis canina ; 3, Avena flavescens ; 4, cannot identify without flowers.—*R. E. W.* Aristolochia elegans.—*W. J. R.* 1, Vanda suavis ; 2, Cypripedium Remus (Bullenianum × purpuratum).—*R. O.* 1, Oncidium amictum ; 2, Oncidium sarcodes ; 3, Oncidium flexuosum ; 4, Oncidium pubes.—*A. J. D., South Wales.* Gaura Lindheimeri.—*W. M.* 1, Potentilla atro-sanguinea ; 2, Mesembryanthemum mutabile.—*W. J. B.* 1, Next week ; 2, Lythrum salicaria ; 3. Nephrolepis todaeoides ; 4, Adiantum cuneatum Pacotii ; 5, Selaginella Mertensii variegata ; 6. Selaginella umbrosa.—*Warsash.* Magnolia glauca.

Nectarines Splitting : *A. George.* The trouble has been caused by too much water at the roots at the stage when the fruits were setting. It may be that the border requires attention, the drainage being choked.

Onions : *W. Wood.* Onion mildew is present. Spray the plants with a solution of sulphate of iron, 1 ounce to 3 gallons of water. Next spring spray in anticipation of the disease, which is almost certain to reappear.

Pea Duke of Albany : *H. Miles.* The disease is caused by a fungus called Rhizoctonia, which is present in the soil. The plants should be treated with quicklime, or gaslime if procurable. Watering is not to be recommended.

Peach Leaves Riddled : *R. Hyslop.* The trees are affected with Cercospora circumscissa (Shot-hole fungus). It is too late too adopt remedial measures this season. In future spray with a solution of liver of sulphur when the leaves have just unfolded, and twice again at intervals.

Peas Diseased : *M. S.* The sample you sent became very dry during transit, and we should be glad if you would send a fresh one, including the roots of the Pea plant. There were a number of larvae in the box in which your specimen was sent, but these were probably of the Common Cabbage Moth (Mamestra brassicae).—*G. H., Pea, and H. G. G., Richmond.* The fungus Ascochyta pisi is causing the injury, and the disease cannot very well be checked now. Burn all infected haulms, and do not sow Peas on the infected land again for some time to come.—*G. W. G., Llandaff.* We are thoroughly examining the specimen sent. which appears to be suffering from a bacterial disease. The disease usually becomes more pronounced at the time of flowering, and hitherto no cure has been discovered. The organism is often present in the plant before any external symptoms appear, and thus it is possible to get a fair crop even from diseased plants. We would suggest that it would be well not to grow the same variety again, as it seems very susceptible.

Roses : *H. S. (Portadown)* and *M. R.* The Roses were too withered to identify.

Strawberry Plants Failing : *J. A. C.* The plants are attacked by eelworms, and beyond recovery. Burn all the plants, and add quicklime to the soil to destroy the worms.

Sweet Pea Spike with Seven Blooms : *T. Timson.* The spike of R. F. Felton variety with seven blooms exhibits fasciation, to which the unusual number of flowers is due. We have received specimens of Peas with seven blooms on former occasions. See Vol. LIV., pp. 259, 345.

Ten-week Stocks Dying : *W. Jackson.* The grub belongs to an insect called Phorbia brassicae. After the eggs have been laid it is too late to take measures for destroying the pest.

Tomato Diseased : *Iris.* Your Tomatos are affected by a bacterial disease. It is probable that the infection has been carried by insects from one plant to another while they were flowering ; well fumigate the house in order to keep it free from insect life.

Tomatos Failing : *S. T.* If the disease attacking your plants is black-stripe, it must have been present in the seed. which is often the case. If so, you will readily understand that there is no cure, the disease having developed in the very earliest stages of the plant ; and we should advise you to destroy all the plants attacked, and obtain fresh seed from another source.

Communications Received.—F. P.—W. O. A.—F. A.—W. E. M.—D. B.—G. St. Ox—O. K.—A. K.—O. H.—C. F C.—J. D. C.—H. W.—W. M.—D. H. F.—Whittingham—G. P. F.—J. M.—W. H. D.—H. W. W.—J. W.—D G. B.—J. C.—G. W. B.—H. M.—Inquisitor—H. M.—F. D. & Co.—D. B. A., Teddington—M. S.—A. G.—J. Cockburn.

THE
Gardeners' Chronicle

No. 1,439.—SATURDAY, JULY 25, 1914.

CONTENTS.

Abbotsbury in early June .. 68
Appointments from Kew 75
Biennials, hardy 67
Books, notices of—
  Preservation of Outdoor Timber 70
Celery, bacterial rot of .. 73
Cider Apples in the Cherbourg district 76
Damage at a nursery .. 76
Decorative exhibits at the National Rose Society's Show 76
Forestry conference at the White City .. 76
Gloriosa Rothschildiana 75
Gooseberry mildew prosecutions 76
Gunnersbury, Mr. Leopold de Rothschild's gardens at .. 69
Hydrocyanic acid gas and its uses in horticulture 65
Italy, notes from .. 71
Kew, thunderstorms at 76
London gardens 76
Plant notes—
  Globularia incanescens 69
  Littonia modesta .. 69
Poplars, the Black .. 66
Rosary, the—
  Roses, past and present 70
  The classification of cultivated Roses .. 71
Societies—
  Birmingham Hort. . 79
  Cardiff Hort. 82
  Gloucester Rose and Sweet Pea 82
  Hort. Club 76
  Manchester & North of England Orchid 81
  National Carnation .. 79
  National Sweet Pea .. 77
  North of England Hort. 83
  Royal Horticultural 75, 77
  Saltaire Rose 81
  Scottish Horticultural 82
  United Hort. Benefit and Provident .. 83
Week's work, the—
  Flower garden, the .. 72
  "French" garden, the 73
  Fruits under glass .. 72
  Hardy fruit garden, the 73
  Kitchen garden, the .. 73
  Orchid houses, the .. 72
  Plants under glass .. 72
Woburn, experiments at 71
Yew tree, an old .. . 76

ILLUSTRATIONS.

Balls Park, Hertfordshire, views in the gardens at 79, 80
Gastrodia elata infected by rhizomorphs of a fungus .. 77
Globularia incanescens 69
Gloriosa Rothschildiana citrina 77
Gloriosa Rothschildiana. (Coloured Plate.)
Hatfield House, Hertfordshire 78
Pollen-tubes attracted chemiotactically towards the stigma 77
Populus Lloydii, 67; P. robusta, 66; Leaves and twigs of the various Black Poplars in cultivation 68
Yew in Bersted Churchyard 76

HYDROCYANIC ACID GAS AND ITS USES IN HORTICULTURE.

Hydrocyanic acid gas (HCN) was discovered by Scheele, a Swedish chemist, in 1782, but its true composition was not known until 1815. It was called prussic acid by its discoverer, and this name has survived to the present time. It occurs in nature in combination with other bodies in a large number of plants, *e.g.*, Prunus amygdalus var. amara, P. Laurocerasus, etc. It is usually prepared by the action of dilute sulphuric acid on potassium ferrocyanide, when the following reaction occurs :—

$$2K_4FeC_6N_6 + 3H_2SO_4 = FeK_2FeC_6N_6 + 3K_2SO_4 + 6HCN.$$

In this process the potassium ferrocyanide is dissolved in water, the diluted acid is added and the mixture distilled, when a solution of the gas in water collects in the receiver. This process is obviously not available for horticultural purposes, since, for such purposes, it is necessary to bring the acid in the form of gas into contact with the pests which it is desired to destroy. This can be done conveniently by treating an alkaline cyanide with a suitable acid, when the gas is at once liberated.

Hydrocyanic acid, when perfectly pure, is a colourless liquid boiling at 26° C. It is one of the most deadly poisons known. It is soluble in water, and a solution containing two per cent. by weight is used in medicine. The solution is only slightly acid, but with alkaline hydroxides cyanides are formed, though it has no action on alkaline carbonates. On standing, the solution gradually decomposes, forming a variety of compounds, dependent on the conditions. The most important compound produced in this decomposition is formic acid (H.COOH), which results from the hydrolysis or combination with water of the hydrocyanic acid, thus :—

$$HCN + 2H_2O = H.COOH + NH_3.$$

This change takes place very rapidly when the solution is heated with acids or alkalies, so much so that if, in the manufacture of hydrocyanic acid from potassium ferrocyanide, strong sulphuric acid be used instead of dilute acid, no hydrocyanic acid is evolved at all. In this case the acid is totally hydrolysed to formic acid, and this becoming dehydrated by the sulphuric acid gives rise to carbon monoxide, thus :—

$$K_4FeC_6N_6 + 6H_2O + 6H_2SO_4$$
$$= 3(NH_4)_2SO_4 + FeSO_4 + 2K_2SO_4 + 6CO.$$

There is also evidence that a little of the formic acid produced here, and also when alkaline cyanides are used, attacks the sulphuric acid and reduces it, producing sulphur dioxide (SO_2), according to the equation :—

$$H_2SO_4 + H.COOH = 2H_2O + CO_2 + SO_2$$

These facts are of the utmost importance to the horticulturist, for the destructive nature of sulphur dioxide, formic acid and carbon monoxide gases is well known. One part by volume of sulphur dioxide in ten thousand parts of air is sufficient to injure delicate foliage. The proportion of these destructive gases evolved from sodium or potassium cyanide and sulphuric acid appears to be dependent on the temperature. If the sulphuric acid and water be quite cold when the cyanide is added the danger is least, but even then the heat generated during the reaction does cause secondary reactions. To correct this, oxidising agents such as potassium bichromate have been added to the diluted acid before the addition of the cyanide, but without result. It must, therefore, be apparent that any system of fumigation dependent on the interaction of sulphuric acid and cyanides must be attended with danger to delicate plants, even when pure ingredients are used. The danger is much increased by the use of impure sulphuric acid. Commercial sulphuric acid, if made from iron pyrites, contains varying quantities of arsenic; this is present in the evolved gas, and may be a frequent source of the destruction of foliage, as also are the oxides of nitrogen which are often present in the crude oil of vitriol. If sulphuric acid be used at all, only the pure acid and not the commercial variety should be employed. In the treatment of dormant stock, or in the use of hydrocyanic acid on hardy trees, etc., the absolute purity of the gas is not of much moment, but for the more delicate operations performed by the modern horticulturist the gas produced must be absolutely pure, the temperature of the gas must be as low as possible and the gas must be as free as possible from steam. These desiderata may be obtained by the use of phosphoric acid instead of sulphuric acid. The gas is evolved more regularly, it it quite free from impurities, the heat of generation is less and, as a result, the gas itself is cooler and the amount of aqueous vapour carried mechanically is reduced to a minimum. The phosphoric acid used should contain 66 per cent. by weight of real acid, and have a specific gravity not less than 1.5. With sodium cyanide the reaction, for all practical purposes, may be assumed to be represented thus :—

$$2NaCN + H_3PO_4 = Na_2HPO_4 + 2HCN.$$

It follows from the equation that equal parts by weight of phosphoric acid and sodium cyanide are necessary, and, since one ounce by volume of the acid of above strength contains one ounce by weight of true acid, the measurement of the acid is simplified.

The cyanide used may be either potassium cyanide containing 99 per cent. or sodium cyanide 130 per cent. The latter salt is manufactured on a large scale for use in the extraction of gold. Since 100 parts by weight of sodium cyanide are equal in cyanide content to 130 parts of standard potassium cyanide, it is put on the market as 130 per cent. cyanide, a term which is apt to confuse. It should be remembered that ten parts by weight of sodium cyanide are equal to thirteen parts by weight of potassium cyanide. Potassium cyanide having a lower value than 98 per cent. should not be used for fumigations.

The use of hydrocyanic acid for the destruction of insect pests was appreciated in America many years ago and exhaustive experiments have been carried on from time to time under Government inspection in the United States. These, for the most part, deal with the application to fruit trees rather than to inside plants. Since its introduction into this country about 1898 it has been employed with a varying degree of success. It is, however, becoming of more urgent importance that horticulturists should appreciate the value of the process and make themselves acquainted with the safeguards necessary to its successful application. This is the more necessary since various Governments have seen the wisdom of excluding the import of plants affected by pests. An ideal application of the process can only result from a practical study of the effects of the gas on both insects and plants, and the conditions must be such that the resisting powers of the insects must be overcome without reaching the point at which the resisting powers of the plants would fail. Each insect and each plant has its own idiosyncrasies. Plants of a succulent nature can less easily resist the action of soluble gases than those of harder wood. The resisting powers of the insects have been very much overrated, with the result that excessive use of the fumigant has been the rule. A proportion of hydrocyanic acid gas equivalent to 0.005 per cent. of the atmosphere of a house is sufficient to destroy aphides, whilst a proportion of 0.10 per cent. will kill any mature insect. The gas has practically no effect on the eggs, larvae and pupae of insects. The principal causes of non-success with the process may be summarised as follows: (1) The use of excessive quantities of the gas for a short time rather than the use of less with a longer period of contact; (2) the use of impure materials; (3) the disregard of the *essential* conditions that the plants and atmosphere must be dry, the temperature must not exceed 60 F. and that fumigation must not be performed whilst the plants are in active assimilation, *i.e.*, in sunlight. We have found that the best results are obtained when the houses are fumigated at dusk and opened on the following morning. The measurements of the house should be very carefully made and the *exact* amount of each ingredient should be used. The cyanide should be dropped into the acid direct by means of a suitable apparatus, and in no circumstances should it be enclosed in paper, which renders the process more than usually dangerous, nor, if sulphuric acid be employed, should it be enclosed in any metallic covering which in the process of solution might assist reduction. In large houses several bowls should be used to ensure as even distribution as possible. Fans are quite unnecessary. The house should be tightly closed up after the fumigation and warning notices should be placed on the doors. In case of the accidental inhalation of the gas, the person should be kept in the open air and a handkerchief saturated with ammonia should be held over the mouth. A mixture of sulphate of iron and magnesia should be administered. Sodium cyanide has been used invariably by us, and the following proportions will be found satisfactory :—

For green aphis :—Sodium cyanide, ⅛ oz.; phosphoric acid, ⅛ oz.; water, ½ oz. for each 1,000 cubic feet. This will not scorch any plants. One application is sufficient.

For black or white aphis, thrips and scale :—Sodium cyanide, ¼ oz.; phosphoric acid, ¼ oz.; water, 1 oz. for each 1,000 cubic feet. This will not scorch mature plants. One application is sufficient.

For mealy bug and red spider in house of mixed plants :—Sodium cyanide, 1 oz.; phosphoric acid, 1 oz.; water, 4 ozs. for each 1,000 cubic feet. Some few young shoots may be affected at this strength, but to a very slight extent only.

For mealy bug on dormant vines, etc :—Sodium cyanide, 2 ozs.; sulphuric acid, 4 ozs.; water, 8 ozs. for each 1,000 cubic feet.

Fumigate three times at intervals of a week to ensure complete destruction. After vines have started growth it is unsafe to fumigate them. The best time is after the fruit has been gathered and before the leaves have fallen. At this period the mealy bug is active and is more easily destroyed than later, when it reaches a semi-quiescent state.

During the past ten years we have carried out some hundreds of fumigations in this country and on the Continent, with, primarily, sodium cyanide and sulphuric acid, and latterly sodium cyanide and phosphoric acid. Having established the fact that 1 oz. of sodium cyanide with phosphoric acid for each 1,000 cubic feet is fatal to all ordinary pests, and that no injury ensues except to the young shoots of the most delicate plants, we secured the co-operation of many leading horticulturists, and asked them to make independent fumigations of mixed houses using 2 ozs. sodium cyanide, 2 ozs. phosphoric acid, and 4 ozs. water to each 1,000 cubic feet. In all cases fumigation was carried out at dusk and the houses opened out the following morning, half an hour elapsing before entry. We submit, as a result, lists of (A) six typical fumigations carried out recently by ourselves; (B) plants in mixed houses absolutely uninjured by the phosphoric-cyanide process at 2 ozs. per 1,000 cubic feet; (C) plants showing slight injury under this process.

List "A."

Six typical fumigations, with results.

1. House of Carnations badly infested with greenfly. Phosphoric-cyanide, ⅛ oz. to 1,000 cubic feet. All fly killed at one application. Flowers and foliage quite uninjured.
2. House of Chrysanthemums which had been lifted from outside. The plants were covered with black fly. Phosphoric-cyanide, ⅛ oz. to 1,000 cubic feet. All fly killed at one application. Foliage uninjured.
3. House of Cyclamen infested with thrip. Phosphoric-cyanide, ¼ oz. to 1,000 cubic feet. All insects killed. Flowers and foliage untouched.
4. House of Palms with scale. Phosphoric-cyanide, ¼ oz. to 1,000 cubic feet. Scale killed; foliage untouched.
5. House of Begonia Gloire de Lorraine infested with mite and thrips. Phosphoric-cyanide, ¼ oz. to 1,000 cubic feet. Insects all killed; flowers and foliage uninjured.
6. House containing about 4,000 Bay trees, taken from outside and infested with mealy bug. Capacity of house 200,000 cubic feet. Sulphuric-cyanide process, 12½ lbs. cyanide, 25 lbs. sulphuric acid distributed in 25 bowls. Two fumigations at intervals of 24 hours. All insects killed and trees quite uninjured.

List "B."

Plants uninjured by phosphoric-cyanide process, 2 ozs. to 1,000 cubic feet :—

Anthuriums, one in flower, Amaryllis, young growths, Anthericum, Adiantum cuneatum, Abutilon Savitzii, Acacia dealbata, Asplenium bulbiferum, Allamanda, Azalea indica, Acalypha hispida, Bouvardia, Calanthe Veitchii, Crotons, Cattleya labiata, Chrysanthemums, Cinerarias, Celosia pyramidalis, Carnations, Clivia, Cyperus alternifolius, Cactus, Centropogon, Cypripedium in flower, Dracaena, Dendrobium formosum, Dieffenbachia, Eucharis grandiflora, Eucalyptus Globulus, Eulalia japonica, Epidendron, Fuchsias, Francoa ramosa, Fittonia, Gardenias, Gesneria, Gloxinia in flower, Habrothamnus, Humea elegans, Ixora, Impatiens Sultani, Lomaria gibba, Musa Cavendishii, Marguerite Mrs. F. Sander, Nephrolepis, Orange, Oncidiums, Pancratium fragrans, Palms, Poinsettias, Panicum plicatum, Pilea muscosa, Pandanus Veitchii, Rondoletia, Strobilanthes Dyerianus, Stephanotis, Selaginellas, Tradescantias.

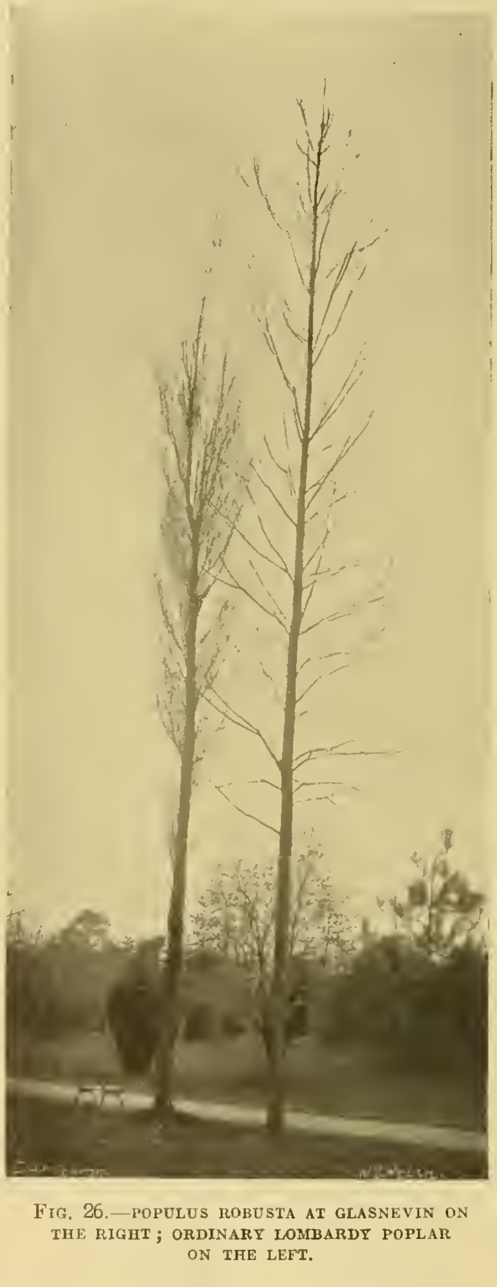


Fig. 26.—Populus robusta at Glasnevin on the right; ordinary Lombardy Poplar on the left.

List "C."

Plants showing injury by phosphoric-cyanide process, 2 ozs. to 1,000 cubic feet :—

Adiantum cuneatum, young fronds slightly damaged; Asparagus plumosus, young growths slightly damaged; Asparagus Sprengeri, young growths slightly damaged; Begonia Gloire de Lorraine, slight dropping of flower, foliage uninjured; Browallia, tips scorched slightly; Coleus thyrsioideus, defoliated; Cyclamens in flower, some flowers slightly damaged; Heliotrope, badly damaged; Jamaica peppers, slightly scorched; Mimosa pudica, leaves dropped after a week; Mackaya bella, slightly scorched; Marguerite Mrs. F. Sanders, tips scorched; Salvia Bethellii, tips scorched; Tacsonia, slightly injured; Coelogyne cristata, foliage injured slightly; Odontoglossum, leaves marked near tip. *F. Pilkington Sargeant and F. C. Edwards.*

THE BLACK POPLARS.

(Concluded from p. 4.)

5. Populus marilandica, Bosc. This hybrid, like the preceding four, has glabrous twigs, but the leaves in shape strongly resemble P. nigra, from which it may be distinguished by the presence of glands at the base and stray cilia on the margin of the blade, and by the placentae and stigmas being variable, 2, 3, or even 4 in number. This originated early in the nineteenth century, and specimens so named from trees at Montpellier in 1833, and Carlsruhe in 1845, can be seen in herbaria. It is always female, and has been erroneously identified by Hartig, Koehne, Schneider, etc., with P. canadensis, Michaux, which is one of the later names of the true American species. It is not very vigorous, but a tree at Kew near the Palmhouse measures 90 feet high by 8 feet in girth.

The two remaining hybrids (6 and 7) have as one parent Populus nigra, var. betulifolia, and in consequence their twigs are covered, like it, with pubescence. In the preceding five hybrids, the corresponding parent is the glabrous Populus nigra, either in its ordinary spreading form (var. typica) or in its fastigiate sport (Lombardy Poplar), and in consequence the twigs are glabrous.

6. Populus robusta, Schneider (see fig. 26). This was found in 1895 in Simon-Louis' nursery near Metz, and during my visit there in 1913 I was shown the spot where the seedling was picked up, about 20 feet distant from an old tree of Populus angulata (about 80 feet high and 8 feet round). This bears female flowers regularly, and one of these, giving origin to the seedling, must have been pollinated by the pollen of Populus plantierensis, a tree not far off (see above). From the latter parent is derived the hairy twigs and the narrow columnar habit, with ascending (not vertical) branches, which characterise P. robusta. This is believed by M. Jouin to be the finest of all the hybrids, and three trees on good soil in his nursery are at 18 years old about 90 feet in height, with stems 5½ to 6½ feet round at 5 feet from the ground. At Glasnevin, on poor, shallow soil, in an exposed situation, there is a fine specimen of P. robusta, which was obtained as a cutting in 1899. It measures about 46 feet in height and 2 feet 3 inches in girth. Its remarkable straight stem, with very narrow ascending branches, is well seen in fig. 26 contrasting with the fastigiate habit of the much older Lombardy Poplar on the left. If this tree is found to bear wind well, as it appears to do at Glasnevin, it may be of considerable economic importance in Ireland, where the Black Italian Poplar is broken to pieces by the constant prevailing wind and heavy storms that are so common in most districts. It would provide speedily excellent timber for box-making, as the stem can be pruned readily to a considerable height before the branches become too large.

7. Populus Lloydii, Henry (see fig. 27), is similar to P. robusta in the pubescent branchlets and shape of the leaves, but is a female tree with

flowers bearing 2 or 3 stigmas. Its origin is obscure, but one of the parents is probably the English Black Poplar (P. nigra var. betulifolia). The only large specimens that we have seen are at Leaton Knolls, near Shrewsbury, the residence of Major Lloyd, where three trees measured, in 1910, 120 feet high by 13 feet in girth, 110 feet by 11 feet 2 inches, and 98 feet by 10½ feet (see fig. 27). Smaller trees have been noticed near Cambridge, and at Turnham Green.

Until lately all the hybrid Poplars in cultivation have been picked up as chance seedlings, but the artificial production of fast-growing trees is now being tried. I have four hybrid Poplars at present which were raised from seed, produced in 1912 by fertilising a Populus angulata (♀) at Kew with pollen of P. trichocarpa. These four seedlings have made very rapid growth, and bear most beautiful foliage, intermediate between the two parents. It will be noticed that the new hybrid is a cross between two Poplars belonging to different sections of the genus. At a future date I shall describe in detail this artificially produced Poplar.

Fig. 28, reduced from a plate in *Trees of Great Britain*, Vol. VII., t. 409 (1913), will be of use for the discrimination, by the leaves and twigs, of the various Poplars mentioned in this article. *A. Henry.*

HARDY BIENNIALS.

(*Concluded from p. 29.*)

MICHAUXIA.

In the Michauxias we have distinct and ornamental plants of considerable merit for the garden. M. campanuloides is the best known, and is an effective plant, about 4 or 5 feet high, carrying a number of white flowers of distinct character. M. Tchihatcheffii is a biennial on some soils. It, also, has white flowers in summer. Raised from seeds sown in May or June, they bloom the following summer.

OENOTHERA.

Oenothera biennis, one of the Evening Primroses, is a tall, rather coarse plant, 3 feet or more high, with yellow flowers, which open in early evening. The best form is called Lamarckiana. Oe. taraxaicifolia, a biennial in some soils, is a trailing species with white flowers. These can be raised from seeds sown in the open or under glass in April, May, or June. The two first sow themselves very freely.

ONOPORDON.

The Onopordons include some fine Thistles, such as O. Acanthium, the Scotch Thistle, growing 6 feet high and having silvery foliage and purple flowers; O. bracteatum, also silvery and 6 feet high; O. Salteri, 8 feet; and O. tauricum, 6 feet. These are very effective, and give the finest plants if sown where they are to bloom.

SAXIFRAGA MUTATA.

Admirers of the Saxifrages may be reminded of the biennial S. mutata, a distinct species, about 9 inches high, giving a good supply of orange-coloured flowers. Sow in pots from May until July, and prick out when large enough.

SEDUM SEMPERVIVOIDES.

This is a striking biennial Stonecrop, with rosettes like those of a Houseleek, and scarlet flowers. It is only suitable for growing on the rockwork, and likes a dry soil and a sunny position.

VERBASCUM.

Of the numerous stately biennial Verbascums only a few are obtainable from seeds, but when once introduced into a garden they generally sow themselves freely, and the resulting seedlings, if undisturbed, produce the most vigorous plants. Seedlings can be raised under glass or in beds in the open, and transplanted in summer or early autumn to positions where they are to bloom. The best species of which seeds are obtainable are V. olympicum, 6 feet, yellow, with tomentose leaves, and V. phlomoides, also yellow, about 5 feet high.

SILENE COMPACTA.

The best of the biennial Silenes, S. compacta, is a useful border plant, growing to a height of about 2 feet, and giving large heads of small, pink or mauve flowers in clusters. It is of easy cultivation in any common soil.

PERENNIALS AS BIENNIALS.

A number of flowers, generally classed as perennials, succeed much better when treated as biennials, and some of these are named below.

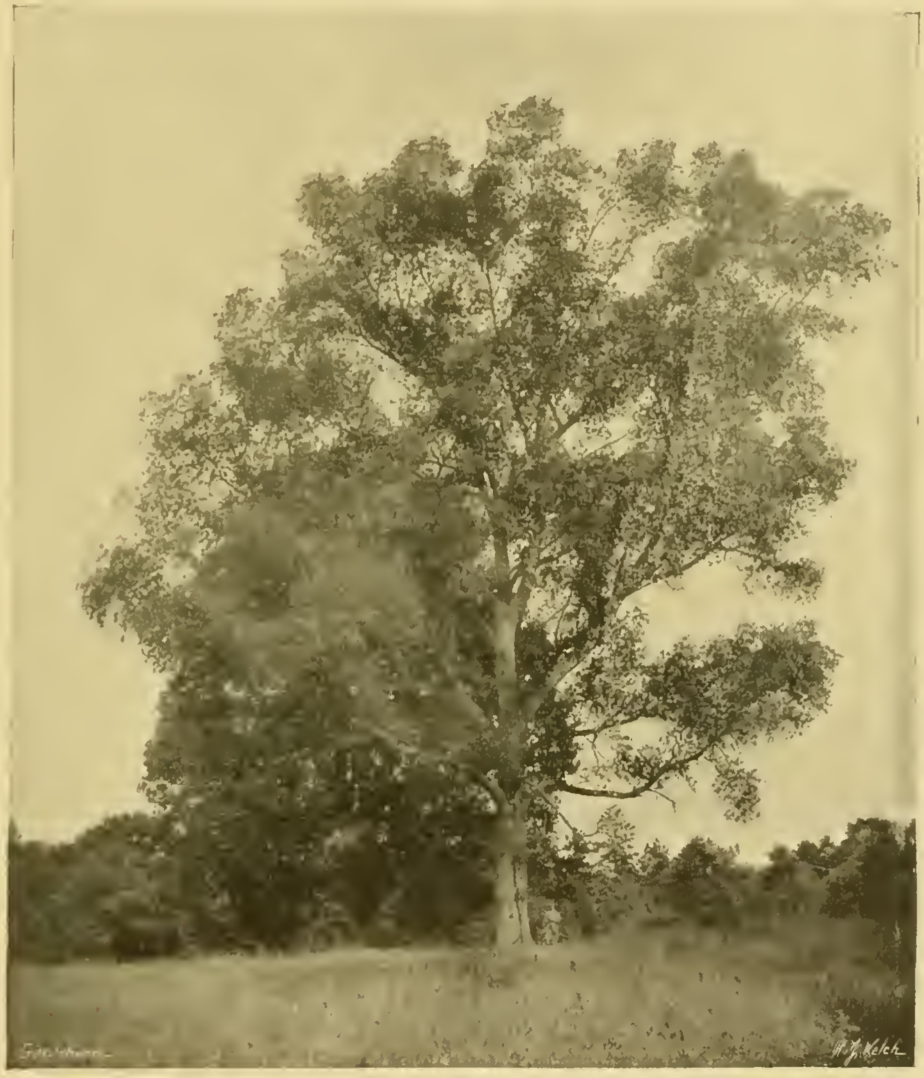


FIG. 27.—POPULUS LLOYDII, HYBRID, GROWING AT LEATON KNOLLS, SHREWSBURY. (See p. 66.)

The list might be extended, but those enumerated will be found to yield good results :—

Abronia umbellata, trailer, yellow; Anchusa italica and varieties, 4 feet, blue; Brickellia grandiflora, 1¼ foot, pale yellow; Calandrinia umbellata, 6 inches, crimson; Callirhoë involucrata, trailer, crimson; Campanula mirabilis, 2 feet, pale blue; Catananche caerulea, 1½ foot, blue or white; Cineraria maritima, 3 feet; Coreopsis grandiflora, 3 feet, yellow; Delphinium cardinale, 3 feet, scarlet; Delphinium nudicaule, 1½ foot, scarlet; Delphinium Zalil (syn. sulphureum), 3 feet, yellow; Iberis gibraltarica, 1 foot, white and purple; Iberis gibraltarica hybrida, ¾ foot, white and purple; Incarvillea Olgae, 3 feet, rose-purple; Linaria alpina, trailer, violet and orange; Lychnis coronaria, 2½ feet; Lychnis Lagascae, 4 inches, rose-purple; Pentstemons of most species; Polemonium confertum mellitum, 1 foot, yellow; Primula sikkimensis, 1½ foot, yellow; and Bedding Pansies.

MYOSOTIS.

The Forget-me-not is a perennial plant, but it suits the convenience of gardeners to treat it as a biennial. The seeds are sown out-of-doors in May or June, the seedlings transplanted in October, and they come into flower in the following spring with the bulk of the Dutch bulbs. Forget-me-nots like a moist situation, and they frequently succeed better in comparative shade than in full exposure to the sunshine and winds. Some of the best effects to be seen anywhere are produced in the pleasure grounds at Kew, the Forget-me-nots forming a carpet, so to speak, in some of the large shrubbery beds. The writer has seen these great breadths of delicate blue in the afternoon sunshine, when they seemed like the very reflection of the heavens. These effects are obtained from varieties of Myosotis dissitiflora and M. alpestris, two of the finest being those known as Victoria and Perfection. Another species, M. azorica, was introduced from the Azores in the middle of the nineteenth century. This species blooms rather late, and has dark blue flowers; the variety Impératrice Elisabeth is an unusually grand form. The rock-gardener is most familiar with M. alpestris, the Alpine Forget-me-not. It has sky-blue flowers, and the habit of growth is cushion-like, just such as is suitable for edging in rockeries. The pillar Forget-me-not, M. stricta coelestina, is a modern novelty that grows about 12 inches high, forming a pyramid, and suitable for cultivation in pots. The flowers are sky-blue. *S. Arnott.*

ABBOTSBURY IN EARLY JUNE.

I took the opportunity whilst at Weymouth in the early days of June of paying a visit to Abbotsbury, and was shown round by the head gardener, Mr. Kempshall. Cordyline australis was flowering everywhere profusely, and great clumps of Beschorneria bracteata and B. yuccoides were throwing dozens of tall, red flower-spikes aloft. Senecio Haastii, which is said to be rare in New Zealand, was in flower, and there were numbers of plants brought from China by Mr. Wilson, among which were Lonicera Maackii covered with white flowers; Clematis Armandii, with white, narrow-petalled blossoms; Lonicera tomentella, white; Neillia sinensis in flower; Spiraea Veitchii, Lonicera Koehneana, bearing yellow blossoms. Cordyline Banksii was in fine flower, and the very rare Cordyline Parryi was also in bloom; and there was a good plant of the New Zealand C. atropurpurea. Paulownia imperialis 30 feet in height, which commenced to flower in February, was still in bloom, and Drimys Winteri, which also began to bloom in February, still held some perfect bloom clusters. This shrub was 25 feet high. Philadelphus Manteau d'Hermine, with double white flowers, was very pretty, and Citharexylum Bessonanum, with blue blossoms, was delightful. In a moist spot there were large groups of Primula Bulleyana and P. Beesiana. Young plants of Ailanthus Vilmoriniana had leaves 6 feet in length. A fine shrub of Halesia hispida was in full flower. Magnolia Campbellii, nearly 50 feet in height, and 20 feet through, looked the picture of health, and last spring bore over a hundred and fifty flowers. The uncommon Pittosporum grandiflorum was bearing its creamy-white flowers, and the very rare Villaresia mucronata, believed to be the only specimen in England, was carrying its white blossoms. This latter specimen is 60 feet high and has very bright, Holly-shaped leaves. Rhododendron Nobleanum started flowering early in October, and the various hybrids and species kept up the display until the date of my visit. Abelia triflora, from the Himalayas, was 25 feet in height; the Lapagerias, which flower abundantly in the late autumn, were in robust health; Tricuspidaria lanceolata, 20 feet in height, was crimson with flower, and it seeds freely here. T. dependens, the white-flowered species, which is generally said to bloom very sparsely, flowers with the greatest freedom at Abbotsbury. The plant, 12 feet in height, was said by Mr. Kempshall to have been white with flower last year. The pale yellow Cytisus pallidus was a sheet of bloom. Camellia reticulata, 12 feet in height, growing as a shrub in the open, bore hundreds of flowers this spring, some of them measuring 8 inches across. The splendid plant of Lagerstroemia indica, 30 feet in height, is pink with flowers in August, and on one ocasion at least has borne so many as 200 spikes of bloom. This is doubtless the finest specimen in England, for in other gardens where it is met with it is rarely more than a few feet in height. There is a glorious specimen of Rhaphitamnus cyanocarpus, 30 feet in height and 25 feet in diameter, which in the spring is a dense sheet of blue. Stranvaesia glaucescens, 30 feet in height, said to be the finest example in England, was just coming into flower. In the spring its leaves are scarlet. Erica arborea, 20 feet, was fine in the spring. Crataegus tanacetifolia was a sheet of white. There was a fine young plant of Olearia insignis; Leptospermum baccatum was looking well; and probably the finest plant of Philesia buxifolia in England was over 5 feet across and 3 feet in height and was already bearing numerous buds. There was a shrub of Ehretia serrata from the Himalayas, about 10 feet in height, but it has never flowered as yet. There was a healthy plant of the very rare Restio subverticillatus. Cornus brachypoda, from Japan, was over 12 feet in diameter and was bearing large, flat clusters of white flowers. Magnolia compressa was in blossom, and Marlea begonifolia was coming into bloom; in July the white flowers with yellow stamens are very effective. Pittosporum crassifolium was bearing its maroon-coloured flowers in quantity. Fagus betuloides was 50 feet in height. Dianella longifolia was bearing spikes of pale blue flowers 3 feet in height, and Veronica Girdwoodiana was covered with blue blossoms. Edwardsia chilensis and Laurelia aromatica were imported direct from Chili last autumn and are doing well. Cornus foliolosa was coming into flower, and there were still blossoms on a fine shrub of the yellow-flowered Callistemon salignus, 15 feet in height. Magnolia hypoleuca, 35 feet in height, is said to have flowered here for the first time in England. There are good plants of Fremontia californica, the rare Litsea japonica, Buddleia salvifolia, and Corokia virgata, the last-named being 10 feet in height. A splendid specimen of Acacia dealbata is fully 60 feet high; Hoheria populnea, 12 feet, flowers freely in the autumn; and there were fine specimens of Buddleia auriculata, which bears clusters of yellowish-white flowers all through the winter which are very sweetly scented. In a bed of seedlings and small plants raised from cuttings and layers were noticed Olearia moschata, O. oleifolia, O. nummularifolia, O. semidentata, O. dentata, O. illicifolia, Acacia Baileyana, Myrsine Urvillei, Veronica macrocarpa, Gevuina Avellana, Isopogon formosus, Vella Pseudocytisus, Senecio Monroi, Melaleuca decussata, Origanum microphylla, Melaleuca elliptica, Dryandra formosa, Leptospermum Nichollsii, L. Chapmannii, and L. Liversedgii. When these grow to a sufficient size they will be lifted from their present bed and planted out in the gardens. A pretty plant was Prostanthera lasianthos, bearing pale blue flowers, though some of the horticultural dictionaries say that the flowers are white tinged with red. Fagus betuloides is a plant about 35 feet high, and this year is bearing fruit, but it is not yet known if the seeds will be fertile. Eucryphia cordifolia is showing flower again this year, and several Banksias

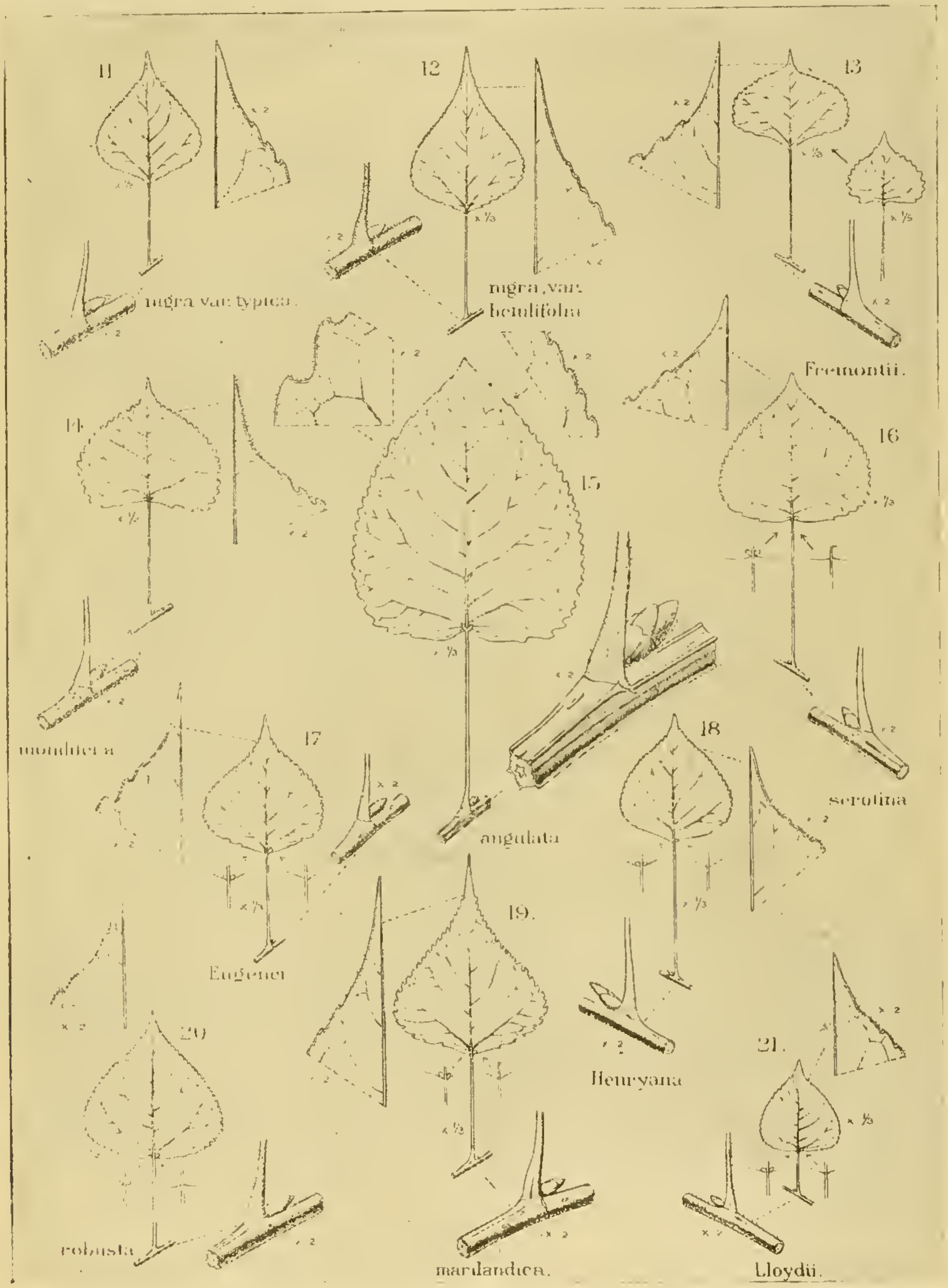


Fig. 28.—Populus: leaves and twigs of the various black poplars in cultivation.
(See p. 67.)

and new and rare Melaleucas are being tested for outdoor culture. As the Castle is being rebuilt after being burnt down the rock garden which lies immediately in front of it could not be visited. *Wyndham Fitzherbert.*

MR. LEOPOLD DE ROTHSCHILD' GARDENS AT GUNNERSBURY.

THE high Cedars which are said to be among the first planted in England, and other fine trees with which the Gunnersbury estate is studded, form a natural setting for many beautiful and varied garden scenes, some of which are tropical in their effect.

The rich collection of trees and shrubs give at this season great beauty to the garden, the variety of the tints of green being remarkable, no two species seeming to have exactly the same shade. Clumps of golden shrubs afford patches of colouring, and the forms of Crataegus give bright colour at salient points. A huge specimen of Crataegus tanacetifolia in flower was a most striking subject. Rose-coloured and white-flowered Robinias, Philadelphuses, great masses of Roses trailing over bushes, walls, and on Pergolas partly covered with the showy leaves of Vitis Thunbergii and other vines, were all splendidly in flower at the time of my visit. In beds and borders are dwarf Roses in great masses, the favourite kinds being planted in beds by themselves.

Summer flowers of a tender nature brighten the scene at various points, although summer bedding is kept well within bounds, the permanent beauty of the estate being relied on for effect. Here and there are elevated beds of Paul Crampel and other Pelargoniums, the beds being built in tiers in conical form; and in one part is an arrangement of beds, each in basket form, the handle covered with trailing Roses, the principal subject in the beds being pink Begonia Major Hope, between which are planted the silvery Leucophytum Brownii, Pelargonium Omphale, and P. Snowflake.

Viewed from the terrace the fine expanse of water, with the variously-coloured Water Lilies and ornamentally arranged banks, forms a beautiful scene to which the stately trees in the background give an effective setting.

To glance at a few of the striking features in the gardens under the care of Mr. James Hudson we note that the fine specimens of scented Pelargoniums, Pomegranates, and great standard Aloysia citriodora (from cuttings rooted by Mr. Hudson 24 years ago) are in their position on the terrace by the mansion. In the sunk garden, with beds of Rose Caroline Testout in the middle, the bays form a Fuchsia garden of standard plants well in bloom.

The large heated Lily-tanks in the open are thickly set with the deep blue flowers of Nymphaea stellata and N. pulcherrima, the latter being the darker; and the best of all large blue Nymphaeas, N. gigantea Hudsonii. In the Japanese garden, Palms, Bamboos and other plants of tropical aspect have reached large proportions, and beneath them Primula japonica and other Primulas, Azalea balsamaeflora and many pretty flowering shrubs are in bloom, colour being also given by the foliage of Japanese Maples. The Gunneras exhibit their huge leaves in contrast with the finely-cut Ferula gigantea, and the long blades of Phormium tenax, some of which are sending up blooms.

Near to the mansion, where some alterations were necessary, Mr. Hudson has successfully moved and planted on the opposite bank some very large shrubs, one of which, a huge mass of Rhododendron ponticum over which Tropaeolum speciosum (Flame Nasturtium) rambled and always made a brilliant show in its season, was shifted only after considerable hesitation lest the Tropaeolum might be lost. However, a large mass of earth in which the Tropaeolum was established was removed with the Rhododendron, and it is now growing as strongly as when in its original position. The fine bank of Heaths was also moved successfully, and the plants of white and purple Menziesia polifolia are covered with bloom. A stretch of new lawn in front, prepared and sown only a few weeks ago, is now in perfect condition.

The terrace on the Gunnersbury Park side, under the care of Mr. Reynolds, has the pillars fronted by tall specimens of Ivy-leaved Pelargonium Souv. de Chas. Turner, standard P. King of Denmark, and white Lilies arranged with Grevillea robusta elegantissima, and tall Dracaenas, and edged with Isolepis gracilis.

ORCHIDS.

In both Gunnersbury House and Gunnersbury Park gardens the Orchids grown are the showy kinds useful for cut flowers and decorative purposes, and include houses of Cattleyas and Laelias. Some useful lessons in the erratic behaviour of certain Orchids bear out the fact which we have often urged, that there is more in securing a suitable place for many kinds of Orchids than there is in any special treatment.

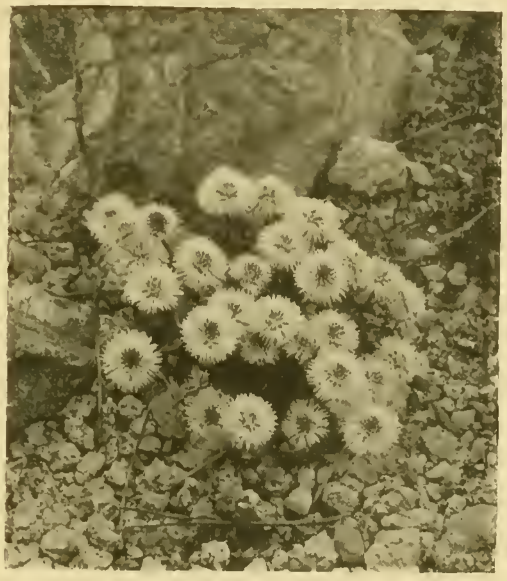


FIG. 29.—GLOBULARIA INCANESCENS: COLOUR OF FLOWERS PALE BLUE.

Phalaenopsis are known to be difficult subjects to cultivate. Some people have spent much money on Phalaenopsis only to see the plants decline, while the fortunate few have no trouble with them.

In the front of a low, warm moist house Mr. Reynolds has several large specimens of Phalaenopsis amabilis Rimestadiana which, at a distance, have grown out of recognition as Phalaenopsis, the plants having tall, stout stems bearing in one case eighteen large, fleshy, bright green leaves without a blemish, and a good supply of fine white flowers. The plant will not grow satisfactorily in any other house on the establishment, but in this particular one it requires but little attention.

Odontoglossums used to give trouble at Gunnersbury until the cool moist house in which they have been grown for some years past was selected, and now they are robustly healthy and well furnished with spikes; in the same house the useful white Masdevallia tovarensis, the red Cochlioda Noezliana, and fine pans of scarlet Sophronitis thrive. Vanda teres, noted as flowering finely at Gunnersbury, also thrives in its selected position, and has flowered well this season, a pure white variety occurring among the rose forms, and of it Mr. Reynolds remarked that the pure white form lasts longer in bloom than those of the rose type. Mr. Hudson was also fortunate in selecting the right position for the fine lot of Dendrobium formosum giganteum, including some seedlings which came up in the gardens; and also for the original lot of Vanda coerulea, which he basketed and suspended where they now are in fine condition. A more recent batch in pots was placed in a similar house, but the plants did not thrive, and they are being basketed and placed in the house with the original stock, so far as space will permit.

Fruits both indoors and out form a leading feature in Mr. Leopold de Rothschild's gardens, and this season has been an exceptionally good one. Peaches, Nectarines, Grapes, Plums, Cherries, and other fruits, both in the orchard houses and on walls, have cropped abundantly.

As an instance of quick development Mr. Hudson drew my attention to a batch of dwarf Figs in pots raised from cuttings rooted just over five months ago. The plants are already bearing fruits, and will continue to give a useful supply. *B.*

PLANT NOTES.

GLOBULARIA INCANESCENS.

THE Globularias belong to the Natural Order Selagineae, and are natives of Europe and Asia Minor, several being found in the Mediterranean region. With the exception of the tender, shrubby G. Alyppum, they are dwarf hardy perennials with evergreen leaves, and blue or white flowers in round capitate heads, from which character they are sometimes known as Globe Daisies. Although they are pretty plants for the rockery, yet they can scarcely be classed as choice or first-class rock plants, with the exception of Globularia incanescens (fig. 29), a newcomer which is a real gem. From a tight cushion of dark-green foliage leafy flower stems arise 2 inches high in May and June, and bear lovely pale-blue flower heads rather more than half an inch across. Starting to flower with a neighbouring plant of Edraianthus Pumilio, it was still fresh and good when the Edraianthus was over. There is something so charming in its fluffy, globular flower heads, neat and compact habit, that this Globularia wins praise from all lovers of Alpines who have seen it. The leaves are half an inch long, oval, with pointed ends on thin stalks ½ to ¾ of an inch long.

The plant is growing in a granite moraine 1 part soil to 5 parts granite chips, where Edraianthus and the true Campanula Raineri are also thriving. *C. F. Ball, Glasnevin Botanic Gardens.*

LITTONIA MODESTA.

A NEAR ally of the Gloriosas, this Liliaceous climbing plant will thrive in a somewhat lower temperature than its congeners. The Littonia is a native of Natal, whence it was introduced 60 years or so ago. It has never been common in gardens, and, save in botanic gardens, is rarely seen in cultivation, though it is an exceedingly pretty climbing plant for the warm greenhouse during the summer months. The tubers, which pass the winter in a dormant state, are very like those of a Gloriosa, but smaller. In the spring they should be shaken quite clear of the old soil and re-potted in a rich open compost. In conditions favourable to growth green succulent shoots will soon push up, and these support themselves by slender tendrils. The flowers, which are produced from the axils of the leaves, are of a drooping bell shape, about a couple of inches across, and of a bright orange colour. A succession of blossoms is kept up for some time. Nearly related to Littonia is Sandersonia aurantiaca, also a native of Natal. Like the other plant, it is a climber, but scarcely to the same extent. The flowers of Sandersonia are urn-shaped, and of a bright orange colour. Both plants need the same treatment. *W. T.*

NOTICES OF BOOKS.

PRESERVATION OF OUTDOOR TIMBER.*

THE destruction of wood by "rotting" depends on the work of living organisms, especially fungi. Moisture, air, and a suitable temperature are necessary conditions in the destructive growth of the lowly plants that induce decay in structural timber. Wood may be completely permeated with air, or it may be completely saturated with water, and in either case show but little sign of decomposition. If, however, both water and air are present to a sufficient extent the conditions of decomposition are at their best, and decay will proceed more or less rapidly, the rate depending on the temperature.

METHODS OF TREATMENT.

(1) Surface Applications.—A coat of paint laid upon wood assists in its preservation because it excludes moisture, and to some extent air; but painting will only be effective if the wood has been thoroughly dried before the paint is laid on. Should the wood be wet to begin with, or imperfectly seasoned, painting may do more harm than good, because the moisture will be imprisoned and prevented from escaping, and conditions favourable to decay will be thereby created and maintained.

Besides oil paint, several other substances are used to waterproof wood, such as coal tar, and although the latter is objectionable from some points of view, it makes an excellent coat, which, being more or less elastic, admits of the contraction and expansion which the wood undergoes under the influence of changes of temperature. A coating that cracks readily is quite unsuitable, because through the openings thus formed water and the spores of fungi gain an entrance and decay is rapidly set up.

(2) Charring.—At one time, and to some extent still, posts used for gates, fences and sheds were charred for 1 to 2 feet at the part that would come immediately above and below the surface of the ground. That part of a post is the point of weakness because there decay begins and there it progresses most rapidly. The effects of charring are due to the destruction of wood to the depth of half an inch or so, the resins, gums, tannin, etc., which this wood contains being driven in front of the heat until they saturate a layer, which then acts as a protecting mantle to the deeper wood. To be effective, charring must proceed so far as to convert a considerable amount of wood into charcoal—a mere singeing or scorching of the wood will do more harm than good, as it will cause the wood to crack and form openings for the entrance of fungi, but will not have proceeded so far as to saturate a layer of wood with resin, etc. The destruction of the surface wood is necessarily accompanied by a weakening of the post, and it is doubtful whether, on the whole, the charring of posts is a profitable process.

(3) Impregnation with Creosote.—Of the various methods that are practised for increasing the durability of timber, that which at present occupies the foremost place is the application of creosote. This substance owes its efficacy to the fact that it is a virulent plant poison, so that wood which contains a considerable quantity of creosote is more or less completely protected against the attack of decay-inducing organisms such as fungi. Wood, when in its natural state, holds certain substances (starch, proteins, etc.) which are the special food of fungi, but when these are saturated by creosote they are incapable of sustaining fungoid life. Creosote also acts as a preservative to some extent owing to the fact that it displaces air and water in the tissues of the wood, and these, as stated above, are essential to the process of decay.

It may be stated that many other substances besides creosote have been used as preservatives, such as copper sulphate, zinc chloride and corrosive sublimate, but on account of their cost or because they are poisonous to animals, or on account of their being easily washed out by rain, or because they corrode metal, they have all been supplanted more or less completely by creosote, except in countries where this substance is much dearer than in Britain.

The amount of creosote or other fluid that wood will absorb varies greatly with the species and other factors. Heartwood takes up much less than sapwood, damp wood takes up less than dry, slow-grown pine takes up less than fast-grown, and conifers as a rule take up less than broad-leaved trees. The wood that is subjected more than any other to the process of creosoting is Baltic yellow Deal, otherwise known as Baltic Red Wood, which is precisely the same species as Scotch Pine. This is the wood chiefly used for railway sleepers and also used for telegraph posts, so that enormous quantities have to be treated annually. As a rule the railway companies specify that each cubic foot shall contain one gallon of creosote, and for estate purposes this is as much as one can afford, since creosote now generally costs 4d. or more per gallon. By the absorption of a gallon, therefore, the cost of the wood is raised by 4d. or more per cubic foot, apart from considerations of labour and interest on plant. Certain soft woods, however, can absorb up to four gallons of creosote per cubic foot, and many will take up two gallons. Apart from all question of cost, there is little to be gained by exceeding one gallon, for in the course of time the excess beyond what the wood can really hold will simply flow out into the soil and be lost.

The great value of creosoting for estate purposes consists in this, that it so prolongs the "life" of low-class timber as to enable such material to be used for fencing and other purposes. Spruce and Scotch Pine thinnings, for instance, which will only last for three or four years if used as posts in their natural state, will if creosoted remain serviceable for from twelve to fifteen years. Larch thinnings, although more durable than Spruce or Pine, should also be creosoted before being used as posts. There are several broad-leaved species which on many estates furnish large quantities of small wood, and which in their natural state are not worth the labour of using for fencing purposes, but are thoroughly serviceable when creosoted. To this group belong Alder, Beech, Hornbeam, Sycamore, Ash, Birch and Poplar. Even coppice Oak has little durability when in its natural state, and ought always to be creosoted before use.

PRESSURE PLANT.

On a large scale creosote is usually applied under pressure, and this process entails the provision of a somewhat costly plant. But on account of the thoroughness and rapidity with which the impregnation is carried out the outlay on a pressure plant is justified where a large amount of timber has to be dealt with, and such plants are now to be found on many estates.

SOAKAGE PLANT.

(a) Hot.—On small estates the cost of erecting and working a pressure creosoting plant is prohibitive, but excellent results can be obtained by simpler methods. Many make use of an iron tank erected on brickwork in such a way that the creosote can be raised to near the boiling-point by means of a fire underneath the tank. Immersion in such hot creosote for eight or nine hours will confer on wood most of the benefits got from two or three hours' treatment in a pressure chamber. The tank should be protected against rain by means of a light roof, and precautions must be taken against fire, creosote being highly inflammable.

(b) Cold.—Even a tank where the creosote can be heated is, however, a more elaborate arrangement than is necessary upon a farm or quite small estate. While heating assists in driving the creosote into the wood, cold creosote will enter almost as far if more time be allowed. Even where only a few hundred posts (stobs) are being used it pays well, unless the wood is mature Larch or Oak, to provide a tank in which the lower part of each post can be treated. Remembering that the upper part of the post will, in its untreated condition, usually last for many years, it is the lower part only that requires treatment; the posts may, therefore, be set vertically in the tank, about one-third of their length being immersed in the liquid. If it is desired to treat gates, hurdles, and rails, the tank must be proportionately longer and deeper, but a very simple arrangement suffices to treat the lower half of a fencing post. An ordinary intermediate fencing post is generally placed in the ground to a depth, at most, of about 2 feet, so that the part "between wind and water" will be treated if it is immersed in creosote to a depth of 2½ feet. A suitable receptacle for the creosote is a galvanised iron tank 8 feet long, 2½ feet wide, and 3 feet deep. This will hold 150 to 200 ordinary posts placed vertically, and will when required also admit of about a dozen straining posts being laid horizontally in it. When the posts are set in the trough the liquid is fairly rapidly absorbed, and as the level falls more creosote must be added. The posts should stand in the liquid for three or four weeks, and if a fresh lot is inserted without loss of time it is evident that two to three thousand can be passed through in a year. Four ordinary posts will absorb about a gallon of creosote, so that the cost of material for each post is only about one penny, and the labour and interest on the cost of the trough are practically negligible. It is desirable that the process should be conducted away from buildings, but a light roof should be provided to keep off the rain. Needless to say, the drier the wood to start with the better will be the results. As a 40-gallon barrel of creosote is rather inconvenient to handle, it is an advantage to construct a small platform at one end of the tank on to which the barrels may be unloaded from the cart. One or two sheets of corrugated iron should be placed in such a position that when the posts are removed from the tank and set up to drip, the creosote that runs off shall flow back into the tank.

It is surprising how high creosote will rise in certain kinds of wood, and it is not unusual to see the material showing on the upper surface of a 5-foot post when not more than 2 feet are immersed in the creosote.

Many miscellaneous articles which come in contact with the soil, such as sheep troughs and poultry coops, last much longer if creosoted.

THE ROSARY.

ROSES, PAST AND PRESENT.

THE caprice of custom is nowhere illustrated more strikingly than in the history of the Rose as a cultivated plant. Of that history, M. D. Bois, the distinguished editor of the *Revue Horticole*, discourses in the May number of that journal. He points out that although the Rose has been cultivated from time immemorial in France, its premier position in the garden has only been reached in that country during the last century. Yet in ancient times this flower was already queen of cultivated plants. Ancient Egypt cultivated the Rosa sancta Richard, an ally and indeed probably a geographical form of R. gallica, and its flowers, so well preserved as to be still recognisable, adorned Egyptian mummies. The Romans set apart rosaria for the cultivation of the flower, and possessed varieties with single and with double flowers, and the fashionable Roman paid high prices for flowers obtained by forcing during the winter months. The beautiful custom of wearing garlands on ceremonial occasions—now lapsing in an age with too strong a sense of the ridiculous—found for the Rose constant employment in antique times and throughout the Middle Ages, and as M. Bois observes, up to the 17th century Members of Parliament, magistrates, and University magnates attended public ceremonies crowned with garlands and bearing bouquets in their hands. The attenuated survival of this ancient custom is met with to-day in the bouquet, which is the perquisite of the patrons of bazaars, and in the floral bunches with which the crews of eights successful in making bumps bedeck themselves on Isis and on Cam during the "Mays" and "Eights" week. But in the Middle Ages this love of flowers—which we sometimes and mistakenly imagine that our age has discovered—was so widespread that the French Parliament had an official florist with the title Rosier de la Cour, and with gardens in the vicinity of Paris at Fontenay-aux-Roses.

---

* Board of Agriculture and Fisheries Leaflet No. 284.

But in the Middle Ages, though the cult of flowers was wide, their cultivation was confined to the gardens of monasteries and of châteaux—in other gardens utility decreed the cultivation of vegetables and fruits and simples. With the rise of French gardening the rôle of the Rose was also restricted, for its freedom of growth and habit assorted ill with geometric regularity. Not till the 18th century, when new plants began to invade our gardens, did the Rose recommence its career of popularity. Up till that time the Roses commonly cultivated in France were R. de Provins, of mixed R. canina and R. gallica blood; R. centifolia, known and grown by the Romans; the Damask Rose, R. damascena, which owed to the Crusades its advent in Western European gardens, as did also the Provence Rose; varieties of R. alba, R. pimpinellifolia, R. lutea, and R. moschata complete the list. Their flowering season was short, and in those days of larger leisure new varieties came but slowly.

At the beginning of the 19th century they numbered about 100, and of these varieties about one-third were singles.

With the introduction of English gardening into France the Rose found and made full use of occasion for dominion: occasion rendered more opportune because of the new species then being or but recently introduced. Thus, Rosa chinensis (R. indica var.) came to us from India in 1766, R. rugosa from Japan in 1784, the Bengal Rose, R. semperflorens, in 1789, the Tea R. indica fragrans from India in 1795, and R. bracteata in the same year. Eight years later R. laevigata was introduced from North America, and the Banksian Rose, R. Banksiae, arrived from China in 1807, and so on for other species and even hybrids.

The invaders and the natives soon commingled, and from their union arose the Hybrid Perpetuals in 1842. Issue of the long-settled Provence Damask and Cent-feuilles, and of the Tea or of R. semperflorens, they renewed the popularity of the flower by the renewal of their blossoms; they possessed likewise powers of resistance to cold, which stood them in their conquest in good stead. First among them came La Reine and Baronne Prévost (1842), then a famous series including Ulrich Brunner fils, Général Jacqueminot, Baronne A. de Rothschild, Frau Karl Druschki, and those which trace ancestry on one side to the Bengal Rose, and also Hybrid Perpetuals such as Le Vésuve and Ducher.

Noisette Roses came as hybrids from America in 1804, and their mixed blood has become yet more mixed, as appears in the so-called Noisette Hybrids such as Rêve d'Or and Madame Alfred Carrière. The Tea Rose likewise aided in the triumph of the flower, for despite its tenderness it has helped to give us not only the H.P.s, but also chance variations characterised by long season of flowering, and also the Hybrid Teas, of which section La France appeared in 1867, and was followed by Madame Abel Chatenay, Caroline Testout, Gruss an Teplitz, Mildred Grant, and many another in that gracious band.

From the Rugosas also have been raised hybrids which add further to the variety at the disposal of the gardener. Nor even so is the list complete. M. Bois, in his masterly summary, deals justly with the various other Roses, which testify in such marvellous manner to the resource of the genus and of the hybridist, and from his review the reader, though he may be no rosarian, can understand and acknowledge the wide-flung empire of this prolific queen of flowers.

THE CLASSIFICATION OF CULTIVATED ROSES.

The papers published in the 1914 *Annual* of the National Rose Society on the subject of the classification of garden Roses have undoubtedly provided a convenient basis for the discussion of this question. I am obliged to *White Rose* for his criticism of my scheme of classification (p. 431), and his able review of the subject has enabled me to grasp a weak point that I had hitherto overlooked.

In the first place I should like to say that in putting forward a scheme for the re-classification of garden Roses I desired to evolve one of extreme simplicity and one that would give growers of Roses for all purposes the exact information they require. Consider for a moment the old system of classification as used by the National Rose Society, and with this consider the modern complexity of parentage. Raisers have produced new classes, or rather new races, of Roses. Notwithstanding this the system of classification has stood still, and it now fails to meet requirements. The botanical classification is not in question. The work of the National Rose Society, however, does not appeal to the botanist, but almost wholly to the cultivator, and principally to the cultivator of Roses for decorative purposes in the garden and in the home. That being so, the present method of classification is practically useless as a guide to the selection of suitable varieties, and information of a definite character cannot now be obtained from it. For example, what does the term "Hybrid Perpetual" convey to the rosarian? If words mean anything one would naturally expect to find in this section Roses of a perpetual-flowering character, but this is not so. Then we have the Hybrid Teas. The term "Hybrid Tea" was probably good enough a decade ago, but to-day the section is unwieldy and embraces several distinct types, so that a radical change is necessary. The samo criticism might apply with equal force to almost every section of Roses in the existing scheme of classification, and what is required is a simple, but nevertheless accurate, alternative, and one that is likely to stand for nearly all time with but little modification or alteration. If a scheme be adopted which divides Roses into classes, such as Hybrid Teas, Hybrid Austrian Briars, Hybrid Rugosas, etc., then, owing to the activity of raisers in intercrossing and using species that have hitherto been neglected, it must soon become involved like the one now in use.

White Rose has shown where the vice of overlapping creeps in in the scheme which I submitted to the National Rose Society. I suggested to put Roses into three primary divisions :—(1) Perpetual-flowering Roses; (2) Summer flowering; (3) Autumn flowering, each division being subdivided into sections as follows :—(A) Garden or decorative Roses; (B) exhibition Roses; (C) semi-double; (D) single. *White Rose* points out that overlapping would occur in these sections because garden or decorative Roses (Section A) would be found in all the sub-divisions, while exhibition Roses (Section B) would also be found in Section A, and to a less extent in Section C. Upon consideration of this I think it might be advisable to drop Sections C and D altogether, and qualify the Roses found in Section A with the addition of the words "semi-double" or "single" where required after the name of each particular variety. This would still mean that exhibition Roses would be found in Section A, but I hardly think this would be a weak point. I take it that the Roses which would be placed in Section A will be by far the most important varieties, and sorts purely of an exhibition character must now take a secondary position. Roses of the Bessie Brown, Queen of Spain, or Mildred Grant type are not in great demand, as compared with garden Roses, in these days. Differentiation must undoubtedly be made, even in the case of garden or decorative Roses, between varieties of a cupped, globular, and pointed character, and after the name of the variety there would require to be some sign indicating the nature of the formation of the bloom. That, however, is a very simple matter. I am glad to observe that the Rev. Joseph Pemberton has departed from the beaten track in his first catalogue of Roses, and in this respect it is unique and will assuredly tend to hasten the adoption of a more satisfactory method of listing Roses than is now found in commercial circles. *George M. Taylor, Mid-Lothian.*

NOTES FROM SOUTHERN ITALY.

The month of April was one of the driest on record. The days were hot, the nights cool, with north winds, and there was no rain. Such weather is very favourable to Irises; mine flowered splendidly, and the unusually large seed vessels bore witness for a long time to the past glory of the blossoms. Iris Junonia had the largest fruits; they measured 15cm. by 12cm. Tulips have also done well, but their flowering season was very short; the Darwin Tulips flowered for only eight days. It is a curious fact that my plants of Le Négrier and La Noire, which I have had for ten years, have not shown any sign of breaking, while La Candeur, Pride of Haarlem, and Maiden's Blush have all broken, not a single bulb being the true variety. T. fulgens is also broken. Of the Italian Tulips, only Tulipa neglecta and T. Billietiana are broken; the rest, *e.g.*, T. Fransoniana and T. planifolia, are still self-coloured.

Young plants, newly established, suffered considerably, although copiously watered; the young shoots of Abies were damaged by the dry winds, and Cedars have also suffered in exposed places.

Allium giganteum produced a flower-head of the circumference of cm. 0.50, and cm. 1.50 high. Unfortunately, it does not yield any seed, and the bulbs produce no offsets, so I have not been able to multiply my stock. It is curious that no seeds are produced, as I have seen bees and other insects visiting the flowers, and have also pollinated them artificially; and my other Turkestan Alliums are seeding freely, *e.g.*, A. rosenbachianum.

Primula Bulleyana is growing in the grass, and flowering freely; and so is P. japonica. On the rockery, the rare Disporum pullum (Uvularia chinensis), is producing its drooping purple bells; and Deutzia corymbosa and D. discolor major is covered with snowy blossoms. It is to be regretted that the flowering time of these pretty shrubs is so short, especially in warm weather. Most of the Roses, with the exception of Ramblers, are quite over—they only blossomed for about a month; the plants are beginning to flower for a second time after severe pruning. The old La France is still one of the finest Roses we have, and almost everlasting; we have here some very old bushes which are flowering luxuriantly, and showing no trace of weakness. *Willy Müller, Fratte di Salerno, Italy.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Autumn-flowering Cattleyas.—Such species as Cattleya aurea, C. Bowringiana, C. Warscewiczii (gigas), C. labiata, C. Harrisoniae, C. guttata, C. granulosa and allied species, as well as the numerous hybrids of this section, will now be well advanced in growth, and will need every encouragement which heat, light, and moisture can give them. The results attained at the flowering period will depend on the maturing of the growth before the flowers appear. After the leaves have developed, and the new pseudobulb commences to form, as much light should be allowed as is not likely to result in scorching of the leaves. This will assist the ripening of the pseudo-bulbs and the development of the plant. Many of the autumn-flowering Cattleyas are apt to begin a second growth immediately after the first growth has reached maturity. This is frequently a cause of plants failing to flower, or remaining soft and sappy when growth is completed. The production of secondary growth is therefore undesirable, and causes a good deal of trouble to the grower. Plants which begin to grow again early in the season may possibly be induced to complete it by affording them every encouragement to make rapid growth. Where it commences later, the want of light and the dull, damp weather of autumn prevent the plant from properly maturing and ripening, and the plant may take several seasons to regain its normal vigour. Plants completing their growth should not only be exposed to the light, but also to dry atmospheric conditions, and a free circulation of air. This is the best way to prevent or check secondary growth. Freshly imported plants must be kept under close observation. The insect pests to which they are subject in their native habitats make their appearance as the new growth develops, and if not removed they soon cause injury and permanent disfigurement. Small scale insects should be carefully removed as soon as the miniature white specks show on the leaves. Thrips must be kept under by regular spraying and vaporising.

Dendrobium.—These plants are now rapidly developing their pseudo-bulbs in the hot divisions. They should be exposed to the light as much as possible; the only protection they require is thin scrim or shading, sufficient to prevent actual scorching. The plants should be syringed two or three times a day. Admit plenty of fresh air through the ventilators during the hottest part of the day, but close the house early in the afternoon, and secure a hot, humid atmosphere during the present month by damping and syringing whenever the outside conditions are favourable. The roof ventilators may be opened a little late at night, to prevent excessive condensation.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

The Formal Garden.—There is much everyday work to be done in this department, for everything should be kept in a complete state of neatness; the edges perfectly trimmed, and the lawns closely mown. Unshapely plants must be pinched back and pegged down. All decayed leaves and flowers must be removed, and watering constantly attended to. If there be any carpet bedding the lines of the designs must be kept clearly defined and truly balanced by the removal of superfluous growths, though many readers will probably be of the opinion that more pleasing effects are produced by a more natural arrangement of summer bedding plants that is free from such hard surface lines. However, it is remarkable that the public takes an intense interest in the very rigid carpet bed representing a clock in motion (see fig. 82, *Gardeners' Chronicle*, September 16, 1905), which is to be seen at Prince's Gardens, Edinburgh.

The Annual Garden.—This will now be the gayest part of the garden. If little tops of Pea sticks were pushed in amongst the groups of plants in their earlier stages as advised in previous calendars, the plants will have grown up through the sticks and quite hidden them; and thus grown, no rainstorms or rough winds will break them down. Many of the half-hardy sections sown either in autumn or very early spring are effective planted in large, irregular groups, such as Pentstemons, East Lothian Stocks, Cosmos, and Godetias, whilst Alonzoas, Nemesias, Marigolds, Scabious, Salpiglossis, Dianthus, Aster sinensis, Zinnias, Verbenas, Petunias, and Helichrysums, sown later in spring, can be relied upon for continuous flowering all summer. Dahlias, Michaelmas Daisies, with other autumn flowering plants, must receive constant attention, and will require careful staking. Keep thin, weakly side-growths well thinned out from the base, and apply a little stimulant in the shape of soot or artificial manure. Keep weeds in subjection by the timely use of the hoe whilst the weeds are young.

Conifers.—On choice Conifers not more than one leader should form; if there are more, remove them at once with the long-handled pruners. Cones should also be removed in the early stages, as these tend to weaken the annual growth. The weeping form of Norway Spruce (Abies excelsa inverta) should be staked afresh each year. This particular form will produce a very effective feature in the landscape if planted in groups. Abies canadensis (Hemlock Spruce) is another most graceful tree, with drooping, plume-like branches. A. Douglasii is the quickest grower of all the family. Cupressus macrocarpa lutea should be in every collection.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Cineraria.—Plants of the first sowing (now in 2-inch pots) are showing roots, and should be transferred into pots 3½ inches or 4 inches in diameter. A suitable compost consists of three parts turfy loam, one part leaf-soil, manure from a spent Mushroom bed, and enough sharp sand to keep the compost open. A frame with a north aspect will suit the plants during the summer. Place a bed of ashes inside the frame, dust the ashes with soot, and half plunge the pots; this will keep them moist and less water will be required. A close watch must be kept for the leaf maggot, which must be removed as soon as found. Spraying with a much-diluted insecticide may serve as a preventive. As the plants become established the lights may be removed from the frames at night and replaced each morning. Later sowings may be pricked off into boxes as soon as they are strong enough to be handled. They should be cultivated in shade.

Calceolaria.—A close watch must be kept on the seed-pans, in case the young seedlings damp off. Should damping take place, remove the affected parts, and admit more air to the frame, closely shading from sunshine. As soon as the seedlings can be handled they should be pricked off into boxes containing equal parts loam and leaf-soil, with an ample supply of sharp sand. Allow the seedlings 1 inch of room each way in the boxes. Stir the soil round the plants with a pointed stick if it becomes caked. The after-treatment of Calceolarias is similar to that of Cinerarias. As the plants develop remove them into 2-inch pots, using a compost as before, but adding a little sifted manure from Mushroom beds. A further sowing may be made forthwith, and treated as directed in a previous calendar.

Adiantum.—Adiantums in pots which are to be used later for decorative purposes, either as pot plants or as cut fronds, may be gradually hardened off and exposed to the light. This will strengthen the fronds, and they will remain fresh for a considerable time after cutting. Young plants may be repotted, using good loam, a little manure and some sharp sand. Avoid using peat, unless the loam is very stiff; the fronds of plants grown in peaty soil are soft and fleshy, and of little use in a cut state. In potting seedlings of Adiantums, it is a good plan to pot three or four together in a clump; these make a furnished plant much quicker than if potted singly. Give the young plants plenty of heat and atmospheric moisture, and when developed treat as advised for old plants.

Gloriosa superba.—A top-dressing should be given to plants of robust growth: a mixture of loam, peat and charcoal will suit them well. The shoots should be supported by stakes or by string stretched across the house near the roof. Weak liquid manure or soot water applied about once a week will be found beneficial.

General Remarks.—No time should be lost in making out orders for bulbs. Freesias will not stand much forcing, and to secure early flowers the bulbs must be potted up as soon as they can be obtained.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Peaches and Nectarines.—Expose the fruit to the direct rays of the sun; in some cases this may be done by means of strips of wood placed under the fruits to support them free of the foliage, and requiring no further fastening than merely resting upon the wires of the trellis. If the fruit seems to press too much upon the wood, a small piece of wadding or other soft material may be introduced between the fruit and the wood. Continue to regulate and tie the young growths on trees in later houses, allowing ample space between each branch. Pay unremitting attention to maintaining the proper degree of moisture at the roots, giving copious supplies of liquid manure when moisture is required. A mulching of decayed manure or other suitable material will help to keep the soil damp by preventing excessive evaporation. As the crops of fruit are cleared from the trees take the opportunity to examine each tree for signs of unhealthiness. It occasionally happens that, although the border has been carefully prepared and the trees have hitherto appeared healthy, a tree may become unhealthy during the progress of growth, the leaves prematurely turning yellow and falling before their time. This often happens in the case of trees which have been grown in pots, through the roots becoming matted around the sides of the receptacle. The tree should be taken up and replanted with the roots spread outwards from the stem. When a tree has been planted for several years, and then shows signs of failing health, it is usually on account of some defect in the soil or drainage of the border. Nothing short of properly draining the border and the substitution of fresh soil will set matters right. Many valuable trees which are lost might be saved by timely attention to this common cause of failure. If a tree is in a defective state by reason of the poorness of the soil, applications of suitable manure or manure water to the border will frequently restore the tree to health. Trees which require lifting and root-pruning must not be dealt with before September or October, but notes should be made of each tree's requirements as soon as they are observed.

Vinery.—Young vines planted at the time advised in a former calendar should be encouraged to make all the growth possible between now and the end of August. Do not, for the present, check the laterals too severely; a rather free extension of these growths will induce free root action, and tend to the development of the young rod. Red spider should be carefully and promptly destroyed, for once this pest has found a lodging place upon the foliage growth will cease for the remainder of the present season. Until the main rod shows signs of turning brown copious supplies of water may be given to the roots without fear of injury.

Strawberries.—The earliest runners, already layered in small pots, will soon be ready to be detached from the parent plant. Preparations may therefore be made for placing them in their fruiting pots, using a compost as directed in the calendar for July 11. A little soot may be sprinkled over the crocks in each pot to prevent the ingress of worms. Pot firmly, keeping each crown well above the level of the soil, and lightly syringe the plants morning and evening until they are well established.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Lettuce.—Make full sowings at once of both the Cabbage and Cos kinds for late autumn and early winter use. The old Hick's Hardy Cos is still unsurpassed for sowing at this time. A small-hearting Cabbage variety is to be preferred to the larger kinds. Another sowing should succeed this one about three weeks hence; and from these, it may be expected that Lettuces for winter use will be available. The soil should be thoroughly pulverised for these sowings, and the seedlings transplanted whilst still small.

Corn Salad.—As a substitute for Lettuce a sowing of Corn Salad may now be made, to be followed at short intervals by others, to produce salad for spring and winter use. It is better known in France by the name of Mâche. It requires no special cultivation, but should not be sown in highly manured soil; if sown in lines it is more easy to keep clean than if sown broadcast in beds. The round-leaved kind is to be preferred.

Tomatos.—If there is space for a few pots of Tomatos for winter fruiting, seeds should be sown at once, and the resulting plants grown under as hardy conditions as they will bear, at least in the earlier stages of growth. The main point is to have strong plants with the fruit well forward before winter sets in; they can then mature slowly as required. Plants setting fruit now will provide Tomatos from the autumn until February; but they must not be forced. There is perhaps no better variety for winter than Carter's Sunrise. The Tomato fly is often troublesome at this season. The best specific for its destruction is vapour of nicotine, the applications to be repeated occasionally as required. If the foliage grows too large it must be partly removed, and all axillary growth rubbed off as it appears. Abundance of ventilation should be provided in closely-glazed structures, but plants fruiting in frames need less ventilation, though an excess of atmospheric moisture should be prevented. Close pinching is advisable for outdoor plants.

Garlic.—The cloves should be lifted and stored as soon as the leaves begin to wither, and Rocambole can be treated in the same way.

Turnips.—Sow enough of Snowball or other white-fleshed variety of Turnip to produce small roots for autumn eating. The soil must be friable and not too dry.

Vegetable Marrows.—These will now be growing fast, and will require frequent attention, or too many shoots will appear and get entangled together. The fruits should be gathered when still young and thrown away or otherwise disposed of if not required rather than be permitted to grow large and be the means of checking production. When water is required apply weak manure-water or water with superphosphate of lime dissolved in it.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Apricots.—Since thinning the crop at the end of May the fruits have swelled favourably and there are promises of an excellent crop. Up to the time of writing very little rain has fallen in this district, and we have been compelled to water our fruit trees. During hot, dry weather trees growing on walls become very dry at the roots, partly because of the situation and partly because the brickwork absorbs a considerable amount of water from the ground. In these circumstances it is scarcely possible to over-water wall trees in times of drought. But it must be remembered that repeated light waterings are not desirable: a good drenching at intervals, followed by hoeing and mulching, is much the better practice. Syringing the trees late in the afternoon is very beneficial in hot weather, for it will help to keep both fruit and foliage clean and healthy. Secure all young shoots to the wall and pinch the lateral growths at the second leaf. Expose the fruits to the sunshine and air in order that they may develop a good flavour. Wood lice and earwigs are often troublesome to wall trees, and will soon spoil much of the fruit if not destroyed. Pieces of the hollow stalks of Broad Beans, or small flower-pots with a little dry hay or moss in them, should be fixed amongst the branches as traps, and such traps should be examined at frequent intervals.

Peaches and Nectarines.—The hot and dry weather of June and July suited these fruits admirably, and at the present time they are more than usually promising. Keep the shoots neatly fastened to the wall and expose the fruits to the sunshine as much as possible. This should be done at the commencement of the season, for if allowed to be shaded till quite large and then suddenly exposed to the hot sun both Nectarines and Peaches are apt to become injured by scalding. Remove in their entirety extra strong growths that would upset the balance of growth: gross wood is rarely fruitful, and if there is an excessive quantity the tree should be marked for lifting in the autumn with a view to root-pruning. An examination in the autumn will prove whether root-pruning is necessary, in which case the long, straight roots must be dug up and shortened, and the fibrous ones induced to grow near to the surface. The small feeding roots can then be supplied with the necessary materials to build up moderate and firm growth, which is essential for good cropping. One of the mistakes made by beginners in outdoor Peach culture is that of leaving too much wood in the trees. This mistake starts in the early spring by not disbudding sufficiently, and is generally continued at each subsequent operation by retaining too many of the young shoots. It is rare that one sees a Peach or Nectarine tree trained too thinly; on the contrary, most of these trees have far too many shoots. This practice is responsible for many partial failures. The stoning period being over, the roots may be fed at intervals until the fruits commence to ripen, when clear water only should be afforded. Concentrated fertilisers may be sprinkled over the roots and washed into the ground with water, or liquid manure from the farmyard may be employed, but neither should be used when the soil is dry. If there is doubt as to the soil being dry water it well the day before the fertilisers are applied. Established trees bearing full crops require large quantities of water. Stir the soil again after watering and replace the mulching materials. Syringe the trees in the afternoons of hot days to keep the fruit and foliage clean. If red spider appears, spray with an insecticide at once, and repeat the spraying at convenient intervals until the pest is exterminated.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Outdoor Crops.—The fine weather of the past weeks has necessitated increased watering of the various crops. This must be done systematically, and each crop should be watered at least once a week. The morning can be reserved for the Melons, Cucumbers and seedling beds, and the hose may be used from 4 p.m. till late at night whenever possible. Crops thus watered thrive much quicker than others, and are saleable at a better rate owing to the shortage from the fields in dry weather. Beans planted outside late in May are now bearing, and will be followed by those sown in the open. The last batch is inserted four rows in a bed 4 feet 6 inches wide, allowing a wide path (16 inches to 18 inches) to facilitate the work when the frames and lights are placed on this crop late in September. A dwarf variety, such as Negro, is preferable; the growth must be helped by watering and hoeing to hasten the formation of the pods before chilly nights set in. The last batch of Celery is now planted in the ridges previously prepared. Where proper attention is given to watering, and an occasional dressing with phosphate, this batch proves itself valuable, especially for late supply in February and March. The earthing-up is not begun before the end of October, which month is the best growing period. As soon as the Cauliflowers are marketed from the cloche beds the ground is prepared, as explained, for the old beds for frames. Carrot Chantenay is sown thinly broadcast and covered with one inch of well-decayed manure, which not only conserves the natural moisture, but also helps the root to retain the bright colour round the collar. A late supply of Cauliflowers is now set among the Melon beds, 15 plants per frame. They clash with the heavy supplies from the field in September and October, and are unprofitable where they have to be despatched by rail, but they are useful for local trade. Broccolis such as Walcheren, Leamington, and Late Queen are excellent varieties for yielding a constant supply until Cauliflowers are again available.

Melons.—The warm weather has greatly favoured the ripening of the fruits in the first beds. They are now examined daily, and cut as soon as the ring round the base of the stalk cracks. They are placed in a cool cellar on a layer of soft hay, and are ready for the table when the skin turns yellow and the base of the fruit gives way under the pressure of the thumb. They are packed in deep boxes, papered separately, with wood wool or dry grass between each fruit, to prevent bruising during transit. The demand for Canteloupe Melons is increasing yearly. Owing to the fragility of the fruit and its bad keeping qualities fruiterers prefer a direct supply to buying imported fruits on the wholesale market, which are generally unsatisfactory, as they have to be cut green for safe travelling. They are easily known by the shrivelled stalk, which is not disconnected at the base. The plants must on no account get dry at the roots, and ventilation should be admitted day and night, except in wet weather. When the frames and lights are at liberty from the Melons they should be transferred to the last planted beds; the cloches are now too small to shelter the fast-growing shoots.

Nursery Beds.—Where an autumn supply of Lettuces is required seeds of Cabbage Lettuce, Vauxhall Defiance and Cos Lettuce Hardy White are inserted. It is essential to sow very thinly to prevent bolting. They are planted in a 4-foot 6-inch bed late in August, and receive the shelter of either cloches or frames from late in September. They are ready for the market in October, when the material is at liberty for rearing young Lettuces for spring.

Cabbages.—During the last mild winter spring Cabbages were marketed before the end of April, and were exceedingly scarce till the September-sown were available. It may be more profitable to select early and mid-early varieties for next season, such as Early Market or Harbinger, with Myatt's Offenham and Early Etampes. The seeds will be inserted during the coming week in a well-prepared bed, and covered with a good layer of well-decayed manure. Owing to the quick growth at this time of the year, preparation is made forthwith for pricking out the young seedlings early in August. This operation well repays the extra labour involved by producing sturdy and even plants, and by permitting, without loss, a delay which may be advisable should the final planting in October be postponed through unforeseen circumstances. The root grubs have been very prevalent this year among the Brassica tribe, and a dressing of the beds with ground lime is advisable.

Bacterial Rot of Celery.—A heart rot of Celery brought about by a motile bacterium is described by Mr. H. Wormald in the *Journal of Agricultural Science*, VI., II., May, 1914. The disease may manifest itself in the outer leaves and may spread to the inner leaves, causing the heart to decay. The bacterium B apivorus appears to be a wound parasite, and probably carries on its damage during the winter when Celery is stored. It is recommended that diseased leaves should be removed before storage, and that plants showing signs of heart rot should be burned.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News. — *Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JULY 28—
Roy. Hort. Soc. Coms. meet and Nat. Gladiolus Soc. Sh. at R.H.S. Hall.

WEDNESDAY, JULY 29—
Bishop's Stortford Hort. Soc. Sh. Normanby Estates Agri. and Hort. Soc. (2 days).

THURSDAY, JULY 30—
Midland Carnation Soc. Sh. at Edgbaston Bot. Gardens (2 days). Roy. Lancashire Agric. Soc. Sh. at Liverpool (4 days). Co. Clare Summer Sh.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.3.

ACTUAL TEMPERATURES:—
LONDON, *Wednesday*, July 22: Max. 72°; Min. 55°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, July 23 (10 a.m.); Bar. 29.4; Temp. 63°. Weather—Dull.
PROVINCES, *Wednesday*, July 22: Max. 78°, Lowestoft; Min. 51°, Buxton.

SALES FOR THE ENSUING WEEK.

TUESDAY, WEDNESDAY, and THURSDAY—
Clearance Sale of the whole of the Glass Erections, Hot-water Piping, Trade Buildings, Vans, Tools, Utensils, etc., at Veitch's Nurseries, King's Road, Chelsea, S.W., by Protheroe & Morris at 12.

Experiments at Woburn. The Fourteenth Report of the Woburn Experimental Fruit Farm, by the Duke of Bedford and Mr. Spencer Pickering, treats of Potato-spraying, trenching, the distribution of soil particles, the effect of one crop upon another, Black Currant mite, and loss of weight of manure in transport.

The primary object of the experiments in Potato-spraying was to ascertain the amount of Woburn Bordeaux paste which is equivalent in fungicidal action to a given quantity of ordinary Bordeaux mixture. This determination is useful, because much less copper sulphate is used in the paste than in the ordinary mixture. Otherwise one more addition to the thousands of trials carried out in this and other countries for the prevention or reduction of Potato disease may be regarded as unnecessary. Some of them have been carried out for many years in succession, and in a great number of districts, giving results which could not be equalled in importance by experiments at the two stations in two years described in the report. It has been amply proved that spraying with Bordeaux mixture usually reduces the proportion of diseased tubers and increases the bulk of sound ones, the latter result being due partly to the effect of the spraying in prolonging the life of the haulm. As to the comparative results of using the Woburn paste and the ordinary mixture, those shown in the tables of the report are in favour of the latter, except when the quantity of the former was so much as 30 lb. to 100 gallons of water. When the results are practically equal any advantage would be measured by the respective costs of the preparations, which the report does not state.

Trials of spraying twice or thrice do not appear to have given sufficient advantage, where there was any, to justify increased expense. Another result indicates the inferiority of soda Bordeaux mixture to the ordinary one made with lime, which is antagonistic to the results of trials carried out by the Irish Department of Agriculture.

The results of experiments in trenching land for fruit and other crops have been previously published. The operation carried out was that which is known as bastard trenching, in which the lower layer of soil is stirred without being brought to the surface. Contrary to the almost universal opinion of market and other gardeners, Mr. Pickering declares that trenching, as a rule, does only an insignificant amount of good when no manure is incorporated with the lower layer of soil, the exception being where there is a hard pan under the surface soil, which prevents the roots of plants from extending downwards. But in market gardening manure is either dug in deeply while trenching is done, or soon sinks in when dug into the top spit; and in ordinary fields prepared for fruit planting there is usually a hard pan under the surface which requires breaking up. Mr. Pickering holds that the effects of trenching or breaking-up the under soil by means of a subsoiler following the ordinary plough are sometimes beneficial and at other times injurious to the growth of fruit trees and bushes. On the average, however, he declares that the results are not worth the expense of the operation. Gardeners and fruit-growers, however, will require a great deal more evidence than the Woburn experiments have supplied to convince them that a practice sanctioned by the experience of cultivators of the soil from time immemorial is a useless one.

Experiments for throwing light upon the distribution of the fine particles of the soil, which are most important for the nourishment of plants, are to be regarded only as preliminary, and the report states that much more extensive investigations will be necessary to establish any general conclusions. The proportion of fine particles in the surface soil is shown to have been greatly affected by the amount of rainfall, and there are indications of the distribution of those particles by rain also to lower strata.

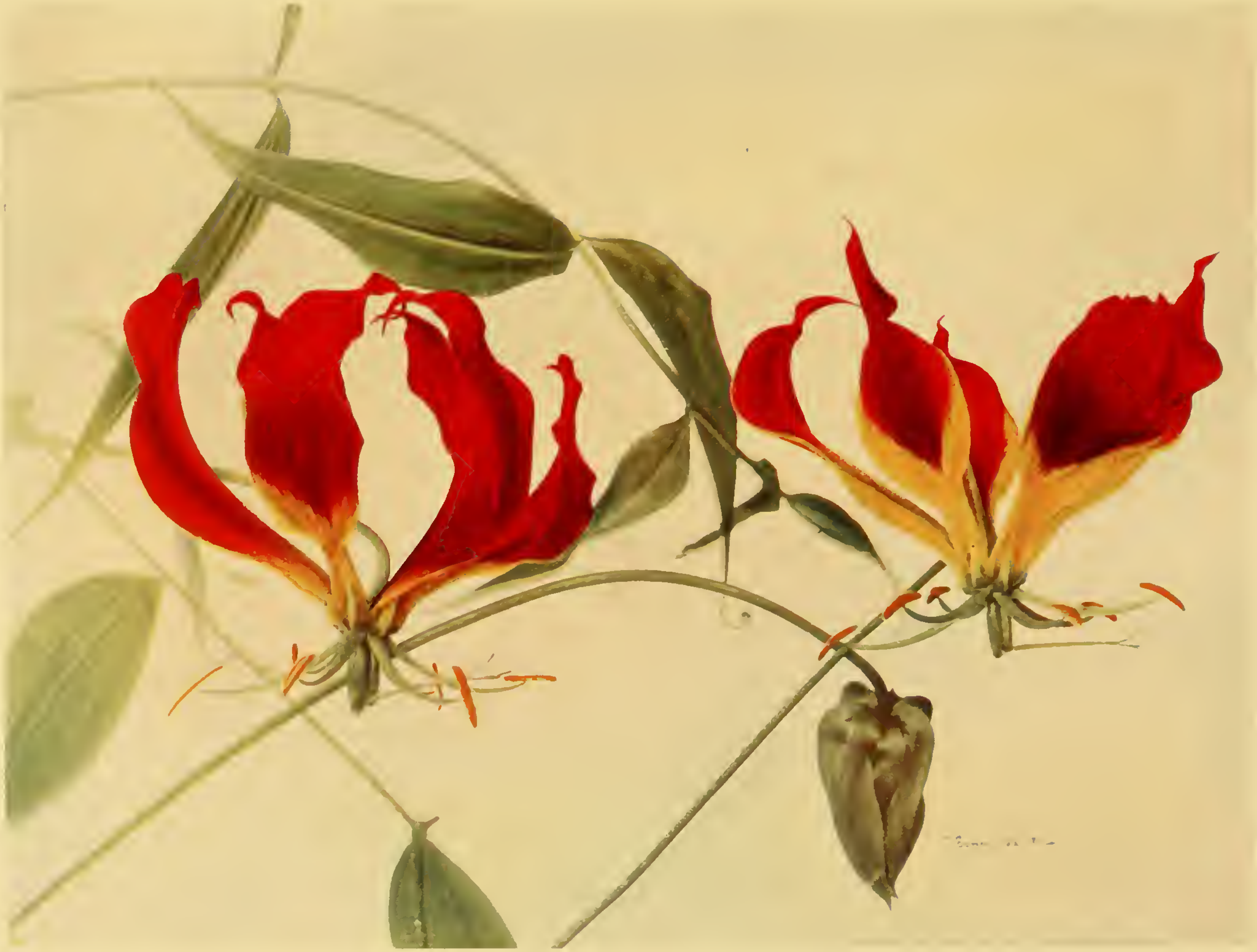
The effect of one crop upon another is chiefly dealt with in connection with fruit trees grown in grass land, in respect of which trials carried out at Ridgmont and elsewhere have been described in previous reports. What appears now is only a confirmation of the conclusions previously announced by Mr. Pickering, that confirmation being based upon recent pot experiments. No more valuable lesson is to be derived from the Woburn Fruit Farm experiments than that the growth of fruit trees in grass impairs their vigour, and even leads in some cases to their destruction. That established trees often flourish well enough in grass land is admitted; but even then they grow less vigorously and produce smaller fruit than in arable land. It is also true that the dwarfing effect of grass may be mitigated greatly, if not entirely counteracted, by very liberal mulching of the trees with manure or other organic matter; but this only proves that the dwarfing action is counteracted more or less by the manuring. It is probable that if Apple trees were grown in two adjoining plots, one in grass and the other tilled, those in the latter would make at least as much growth without any manure as those in the former with an annual mulching.

We can point to other experience which confirms that reached at Woburn. Part of an orchard of trees six years from the planting was allowed to grass itself over. The result in two or three years, in spite of manuring, was the serious dwarfing of the trees, while those on the adjacent arable land continued to flourish. The differences in growth of new wood, size and colour of the leaves, and size of fruit were very striking. Four years after the grassed part of the orchard was grubbed up, and in a single year the appearance of the outside row of Apple trees left under grass, which had less than half its root area in the land restored to arable cultivation, was better in all respects than the row next to it, which remained entirely under grass. Two years later all the grass was dug in, and the increased vigour of the trees quickly became very striking, though some of the weakest growers, such as Lane's Prince Albert, were dwarfed beyond complete recovery.

Mr. Pickering repeats his earlier conclusion to the effect that the injurious results of growing trees under grass are due to a toxic substance developed by the grass, and his elaborate pot experiments are cited in confirmation of this conclusion. Dr. E. J. Russell contributes an article to the report, in which the same conclusion is set forth.

The great improvement in the growth of trees which takes place after grass has been dug in is partly explained by experiments indicating apparently that the leachings from grass roots, though injurious to trees or plants when allowed to reach their roots without oxidation, become beneficial after

Supplement to "The Gardeners' Chronicle"



GLORIOSA ROTHSCHILDIANA (Nat. Ord. Liliaceae)

Stove Climber from Tropical Africa.

exposure to the air. No toxic element has been actually detected, and the hope of identifying it, Dr. Russell explains, is dimmed by the quickness with which it becomes oxidised when exposed to the atmosphere.

It is further pointed out that the supposed toxic action of the emanations from the roots of grass and other plants may be either direct or indirect, in the latter case acting through the agency of bacteria in the soil.

Both Mr. Pickering and Dr. Russell maintain that the results of their experiments exclude all suggested causes of the deficient growth of trees under grass other than the toxic action of the grass roots upon the roots of the trees, either directly or by affecting injuriously the beneficial bacteria of the soil. The conclusion would be more convincing if the poison could be isolated and identified.

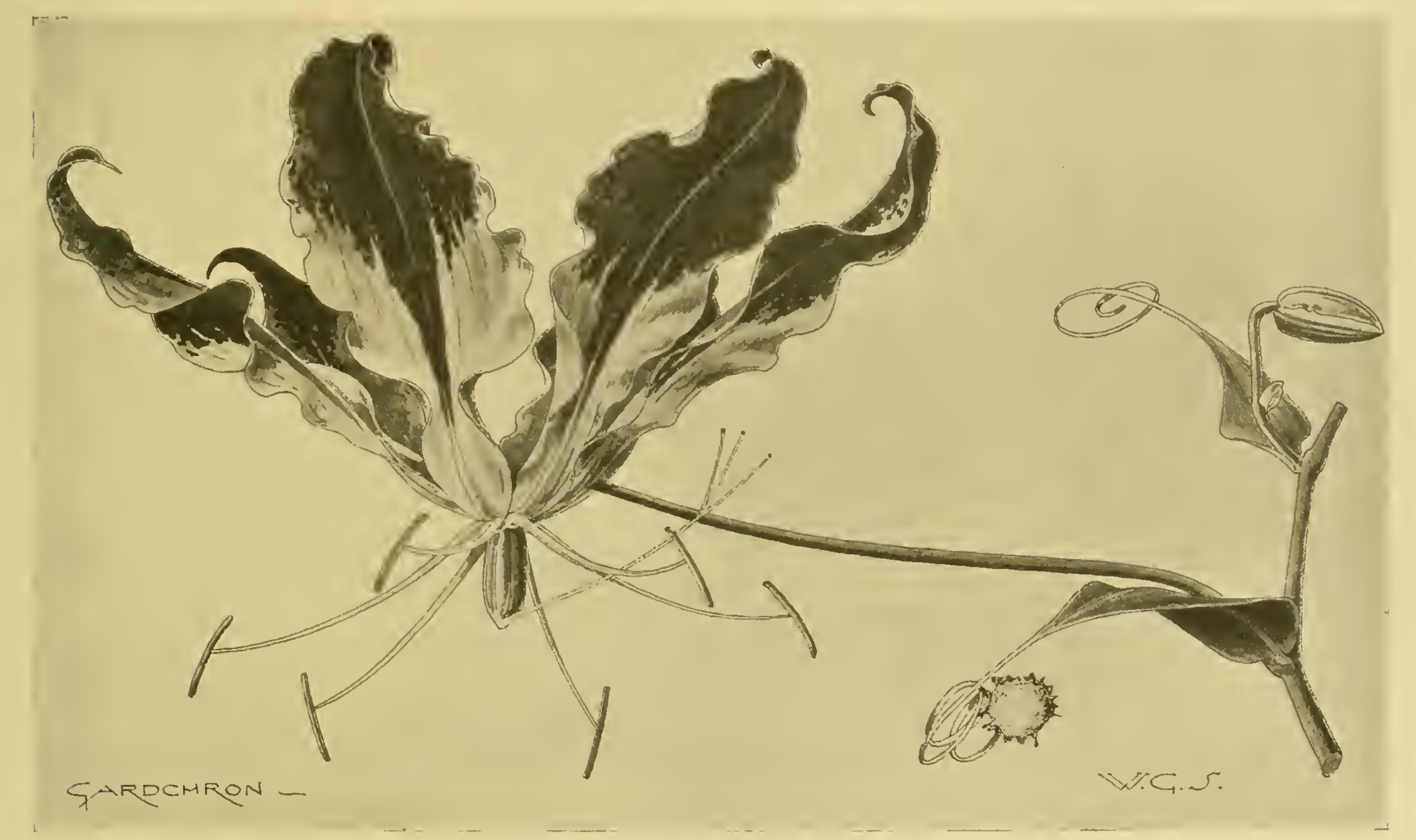


Fig. 30.—GLORIOSA ROTHSCHILDIANA CITRINA: COLOUR OF FLOWER, CITRON-YELLOW AND CLARET-PURPLE.

A trial of immersing cuttings of Black Currants in hot water for the purpose of killing mites in big buds proved a failure, as a temperature high enough to destroy the mites killed nearly all the cuttings also. It is to be observed that no cuttings containing big buds should be used for raising bushes. They should be taken from young bushes which have not become visibly infested. Another experiment, not yet concluded, is that of cutting infested bushes to the ground level and repeating the operation in the next two seasons. This is said to have proved completely successful in one instance. It is an expensive way of raising bushes, and in all probability those ultimately raised if free from mite at first will not remain so longer than clean maiden or two-year-old bushes planted without rendering a plantation barren for three years.

The vexed subject of deficient weight in town manure conveyed by rail is well treated in the report, and evidence is given of fraudulent conduct on the part of some contractors, and of negligence on the part of a railway company.

Our Supplementary Illustration, Gloriosa Rothschildiana, one of the showiest of the climbing Lilies, forms the subject of this week's coloured illustration. The original form of Gloriosa Rothschildiana was collected by Major H. B. Rattray in the Victoria Nyanza region, Uganda, and it flowered at Tring Park. It was described and illustrated in the *Gardeners' Chronicle*, May 23, 1903, p. 323. The flowers, reduced in our Coloured Plate, are over 6 inches across. This form is still by far the best, the later importations, which vary much in size and colour, not being equal to it. The variety citrina (see fig. 30) has citron-yellow flowers with claret-purple bands, and closely approaches the Lake Tanganyika form known as G. Carsonii. As with some sections of Lilium, the botanical features in Gloriosa which serve to distinguish between the different species are but slender, the chief specific characters being those of size and colour rather than of structure. Primarily, most of the species can be placed under either G. superba or G. virescens (simplex), G. Rothschildiana and G. Carsonii coming under the latter species, but for garden purposes the great superiority of the above-mentioned varieties over the Natal form of G. virescens known as G. Plantii and the more inferior typical forms from some other localities renders it desirable to keep the names at present in use in order to distinguish the better from the less showy kinds. In scientific classification the species are by some authorities divided into climbing and dwarf or non-climbing, but the division is artificial, for all are provided in some degree with the tendril-like continuations to the leaves, which prove that, morphologically, they are all climbers. The species are easy to cultivate if the proper seasons of growth and rest are observed. To begin with, in early spring the dry tubers should be potted singly in small pots in sandy peat and loam. When growth commences they should be given a shift into large pots, using sandy loam and leaf-mould for the compost. The plants should then be placed in the warm house, each beneath that part of the roof over which they are intended to run, and strings placed for them to run over. When the growths are well advanced flower commences and continues until the resting season arrives. If portable plants for decorative purposes are required the growths should be trained round wire globes or sticks placed round the edges of the pots. The turning yellow of the leaves and decay of the stems indicate that no more water is required, and the plants in the pots as they are should be stored in a dry place in a temperate house and water withheld until the growing season comes round again. During the period of growth weak liquid manure may be given with benefit.

Royal Horticultural Society.—The next meeting of the committees will take place on Tuesday, the 28th inst., in the Vincent Square Hall, Westminster. At the three o'clock meeting in the Lecture Room the Rev. Canon Horsley, M.A., will deliver an address on "Swiss and Alpine Flora."

Appointments from Kew.—Mr. F. Glover and Mr. W. N. Evans, members of the gardening staff of the Royal Botanic Gardens have been appointed, on the recommendation of Kew, Sub-inspectors for the purposes of the Destructive Insects and Pests Acts under the Board of Agriculture and Fisheries.

Forestry Conference at the Anglo-American Exposition.—The conference arranged in connection with the Forestry Exhibition at the Anglo-American Exposition, Shepherd's Bush, took place on Thursday, July 16. The morning session commenced at 11 a.m., when Sir Herbert Maxwell, Bart., presided, and in the afternoon the chair was taken by Sir William Schlich. Four papers were read, and both these and the discussions proved exceedingly interesting and instructive. Unfortunately the audience was small, being limited to about 25 persons in the morning and 35 in the afternoon.

London Gardens.—This is the title of an association organised by Mrs. Sullivan, 32, Victoria Street, Westminster, for the purpose of encouraging the cultivation of small gardens in London and also to interest town dwellers generally in window and roof gardening. The first annual exhibition will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on September 9. Amateur horticultural societies, associations, and individual exhibitors within the L.C.C. area are invited to compete for the prizes in the various classes.

Cider Apples in the Cherbourg Vice-Consular district.—The crop of cider Apples in the Cherbourg district promises to be above an average, and nearly as good as that of 1913, which was exceptionally large. There being a large reserve of cider from last year growers will probably be glad to find an outlet for the 1914 crop, and there should be a fair amount of Apples available for export from the district at reasonable prices.

Thunderstorms at Kew.—The *Kew Bulletin* records that on two occasions within a month of each other, in May and June last, two Atlas Cedars in Kew were struck by lightning. On the first occasion, the evening of May 22, one of the tall Atlas Cedars forming the avenue from the Pagoda to the south-west end of the lake was struck and its bark torn off in a curious spiral, the rupture encircling the trunk three or four times. Some of the bark was thrown thirty to forty yards away. During the same storm three flagstones in the paved path that surrounds the iron fence of the Japanese gateway (which stands not far from the Cedar) were lifted from the ground—one of them turned completely over. The Cedar struck on the second occasion stands in the Rose garden. The bark of this tree was also partially peeled off, but the injury was not so great as in the case of the tree struck during the earlier storm.

Damage at a Nursery.—An act of vandalism, involving an estimated loss of £200, was committed at Messrs. Fairbairns', Botcherby Nurseries, Carlisle, last week. Many Sweet Peas were observed to be flagging, and on examination it was discovered that the plants had been salted. The wire supports had also been removed. So far no clue has been obtained of the perpetrators of the outrage.

Gooseberry Mildew.—At the Old Street Police Court on Wednesday last summonses under the Gooseberry Mildew Order (1914) were heard against a number of fruit growers in the Maidstone district of Kent, and the evidence was to the effect that in all cases quantities of Gooseberries affected with the disease to a greater or lesser extent had been consigned by defendants to Spitalfields Market for sale. Penalties were imposed in five cases.

HOME CORRESPONDENCE.

An Old Yew Tree.—The decrepit Yew tree shown in fig. 31 appears to have been unknown to Dr. J. Lowe, as it is not enumerated in his well-known book on *The Yew Trees of Great Britain and Ireland*, and may therefore be of some interest to those who admire relics of antiquity of this kind. This tree stands in Bersted churchyard, near Bognor, Sussex. It is about 30 feet high, as near as I could tell, and is 5 feet in diameter across the hollow part of the trunk at about 3 feet from the ground, so that the girth when entire would be about 15 feet. The hollow faces the west, and the shell of wood that now remains is about 6 to 8 inches thick. The top of the tree is broken off, and the effect of the westerly winds is seen by the manner in which the development of branches in that direction is arrested, so that the tree is lop-sided and has been propped up to prevent its destruction by gales of wind. There appears to be no definite history of it, but its age is reported to be about 800 years. This, however, seems very doubtful, as, according to Dr. Lowe, the rate of growth of the Yew is at the most about 1 foot in diameter in 70 years, which would make the age of this tree between 350 and 400 years. *N. E. Brown.*

Table Decorations at the National Rose Society's Show.—Great inconvenience was caused to the exhibitors, mostly ladies, of the decorated tables, baskets, bowls, and vases at the Metropolitan Rose Show of the N.R.S. by the shaky condition of the boarded floor. If the members of the Executive Committee are not aware of this defect the steward in charge should point it out to them and the great inconvenience caused to the exhibitors. It will be realised by all who have competed in such classes that a firm table is essential for the proper arrangement of decorative exhibits. Complaints were heard on all sides. Judging from a cursory survey the tent was erected on a slope; it is convenient in so far as it is near to the other tents. To obviate the inconvenience of the sloping ground a boarded floor is laid, but with an insufficient foundation, so that when the floor is walked upon it bends and sways considerably. Take the case of a central vase on a table, which is oscillated here and there by continued tramping. A central or side flower is fixed in position, the next moment it is leaning in an opposite direction. A large hole is made in the bunch by the swaying of the flowers, more blooms are put in to fill the gap, and a heavy, crowded centrepiece results. Visitors who do not realise the conditions criticise the tables adversely and unfairly. It is for the executive to amend this fault. Might I suggest the most obvious thing to do, if no other site is available, is to level the slope so that a level and firm turf base is assured? The Executive cannot plead lack of funds as an excuse for not making this alteration. *Experientia docet.*

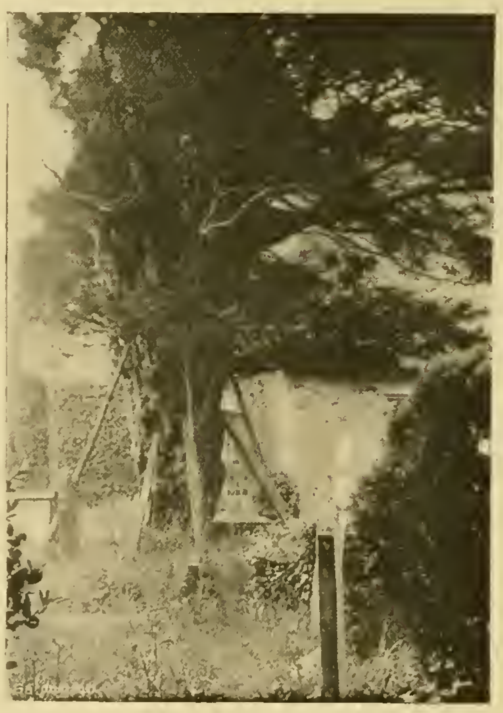


Fig. 31.—OLD YEW IN BERSTED CHURCHYARD, SUSSEX.

SOCIETIES.

HORTICULTURAL CLUB.

EXCURSION TO HATFIELD HOUSE AND BALLS PARK.

July 15.—The annual outing of the Horticultural Club on July 15 was a most enjoyable event. The members and their friends met at the Hotel Windsor, Victoria Street (the headquarters of the club), at 9.30 in the morning, and proceeded by motor to Hatfield House (see fig. 34). Here they were met by the head gardener, Mr. H. Prime, who escorted them over the famous domain of the Marquess of Salisbury, where the West Garden, enclosed by delightful alleys of Lime trees, and containing a profusion of hardy flowers, received due meed of admiration. This garden contains gnarled Mulberry trees, said to have been planted by King James I., and adjoins Queen Elizabeth's palace, which has for many years been used as stabling, but is now being transformed into a banqueting hall. After lunch at the Red Lion Hotel a tour was made of the interior of Hatfield House, which is full of historical associations. On the first floor the members paused to admire from the windows the view of the pleasantly-wooded park, which contains many fine old trees, amongst them being the Oak under which the Princess Elizabeth was sitting when she received news of her accession to the throne of England. From the windows the patterns of the flower-beds of the eastern and southern sites of the house could be traced, and the wealth of bloom appreciated.

Leaving Hatfield the party motored across to the county town of Hertford, and up the hill to Balls Park, where they were cordially received by Sir George and Lady Faudel-Phillips and their family. After tea, which was taken in the large drawing-room, the house was inspected, and the party then proceeded to the garden, an extremely fine one, supervised by Mr. B. S. Faudel-Phillips, with the assistance of a first-rate gardener (Mr. F. Fitch). Mr. Faudel-Phillips accompanied the visitors, and pointed out the chief features of interest. Balls Park was described and illustrated in the *Gardeners' Chronicle* for March 21 last, when the origin of the name, which was taken from that of Simon de Ball — the owner during the time of King Edward I.—was noted. The visitors were enchanted with the herbaceous borders which were in the height of their beauty, and with the colour schemes of bold masses of blossom—a triumph of care and taste. In Nan's Garden (so named after a loved aunt) the Roses around the exquisite old Venetian wellhead were in all their summer glory, and testified to the skill of the gardener as well as to the taste of the owner. The sunk garden in the wood (see fig. 35) is more beautiful than ever. From this garden runs the long shrubbery border, where a congenial home has been found for beautiful and valuable shrubs. In the flower garden it is the Polyantha Roses which provide the chief floral display, and these mingle with the feathery plumes of Humea elegans and the tall standards of Wichuraiana hybrids. Nor does Balls Park rely solely on its floral features, for many of the trees are of more than passing interest. Mention may be made of an exceptionally fine Catalpa bignonioides, a Purple Beech, and a cut-leaved Oak, which embellish the smooth, green lawn near the house. After the tour of the beautiful garden refreshments were partaken of in the Hall, and on behalf of the club Mr. H. B. May expressed to Mr. B. S. Faudel-Phillips (and through him to Sir George and Lady Faudel-Phillips) the thanks of the visitors for the generous hospitality extended to them, and the pleasure it had given them to see the very beautiful gardens, of which they would all retain exceedingly pleasant memories. In reply, Mr. Faudel-Phillips said that his father and mother both regretted that they were not able to accompany them round the gardens, but it was a great pleasure to them to entertain the Horticultural Club. He added that one of the pleasures of gardening was the opportunity it afforded of meeting friends who shared the same interests and of admiring together the plants and flowers loved by them all.

ROYAL HORTICULTURAL.

"MASTERS" MEMORIAL LECTURE.

July 14.—The second of this year's Masters Lectures was delivered by Prof. J. B. Farmer, F.R.S., at Vincent Hall on the above-mentioned date. The lecturer took as his theme "The Relation of Plants to their Biological Environment." The lecture opened with an account of the way in which plants grow in peculiar conditions, where the supply of available nutrition is limited by external conditions. The relations of desert and of the high Alpine plants were adduced as examples, and the ways in which their root-systems are adapted to the environment, and the manner in which this affects the distribution of the plants themselves, was discussed. The lecturer went on to consider the more intimate relations as they exist between social plants. The modes in which bacteria and fungi are mutually dependent on each other were cited as examples, and in particular the remarkable interaction of the nitrite and nitrate organisms was described, and it was shown how the shielding of the latter from the (to it) poisonous effect of ammonia compounds was secured by consortment with the nitrite organism, which, in its turn, provides the nitrate-producing species with the means of existence.

The symbiosis of fungus and root to form mycorhiza was discussed, and the parasitic nature of the fungus, coupled with the ultimately prophylactic reaction of the root-tissues, was emphasised. The case of Gastrodia elata, a Japanese Orchid, was described, and actual specimens received from Prof. Rusano through Mr. Taheda were shown (see fig. 32). This Orchid, a terrestrial one, grows in the neighbourhood of Oak copses, and produces tuberous underground rhizomes. These do not flower unless the tubers become infected by the creeping rhizomorphic strands of an agaric, Armillaria mellea, a fungus common in this country, where it often damages trees, and is responsible for much injury in Pine woods. When the strands envelop the tubers the fungous threads penetrate the tissues, and form a growth inside them. Thus stimulated, the tuber gives rise to other tuberous growths which form flowers.

The questions of attack, predisposition, and immunity were discussed. The actual attack is the result of chemiotactic attraction, given either by the host or the parasite for the other partner. The process itself was illustrated by the behaviour of germinating pollen grains of Scilla growing on agar-agar plates. It was shown that a portion of the stigma of the flower acts as a strong source of attraction, causing the pollen tubes to deviate towards it from whatever other direction they might have been originally growing (see fig. 33). This results from the diffusion of chemical substances—partly sugars—from the stigma.

Predisposition was shown to be due to a considerable variety of causes, and only individual study could decide on its nature for a given instance. This and the securing of immunity is a subject of profound importance to horticulturists; they present problems that can only be solved by the co-operation of the botanist and chemist with the horticulturist. That the faculty of immunity is complex in its actual nature, and differs in various instances, was shown. It may be mechanical or chemical, and it may result from the reaction to the poisonous influence of the parasite. The facts of mycorhiza again present indications of the way in which the matter may be approached, and the probability of the existence of a chemical basis for immunity was shown from the results of a study, as yet incomplete, of the common inability of fungi to attack the nectaries despite the food-value of the excretion that nectaries discharge.

NATIONAL SWEET PEA.

July 16.—The fourteenth annual show of the above society took place at Vincent Square on the 16th inst. Although the quality of the blooms was not quite so high as was the case last year, it was far better than might have been expected in this unfavourable season. Some of the large trade displays of former years were missed, but the competitive classes provided a brilliant display. As last year, the finest flowers were shown by a lady exhibitor. Then it was Mrs. F. E. Hall, Redbourn, Hertfordshire, who won this distinction. This year the honour fell to Mrs. Macnamara, County Clare. White varieties were comparatively rare, probably on account of the recent rains. There seems to be a lack of novelties this year, for only three new varieties received Awards of Merit, and of these Royal Purple is practically a 1913 variety.

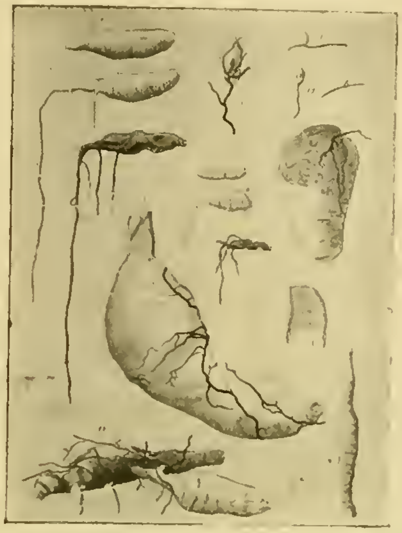


Fig. 32.—Gastrodia elata, a Japanese terrestrial orchid infected by rhizomorphs (root-like strands) of the fungus Armillaria mellea—see text.

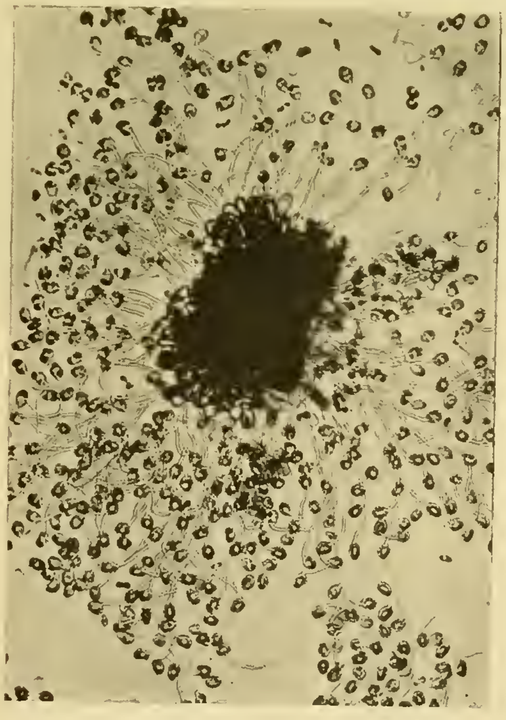


Fig. 33.—Pollen grains of Scilla sp. producing pollen-tubes: the latter attracted chemiotactically toward the stigma of the plant—see text.

Eighteen bunches, distinct.—In this and the three following classes trade growers were excluded. Sir Randolf Baker, Bart., Blandford (gr. Mr. A. E. Usher), won the 1st prize. His flowers were of good size and fresh colour; the stalks were long and stout, and the only fault which could be found was the large space between the top two and the lower flowers on many spikes. The principal varieties were May Campbell, Edith Taylor, Mrs. Cuthbertson, Dobbie's Cream, Marks Tey, Hercules and Princess Victoria. Lord North, Wroxton Abbey, Banbury (gr. Mr. E. R. Janes), won the 2nd prize with very fine bunches of Thomas Stevenson, Barbara, Hercules and Lady E. Eyre; 3rd, Mr. Wallhusen, Pinhay, Lyme Regis.

Twelve bunches, distinct. — Mrs. H. Macnamara, Ennistymon House, Ennistymon, County Clare (gr. Mr. H. Hunter), far outdistanced the other competitors, and showed the finest collection in the show. Her bunches of Audrey Crier, T. Stevenson, Elsie Herbert, Hercules, and Mrs. Hardcastle Sykes were magnificent. 2nd, E. G. Mocatta, Esq., Woburn Place, Addleston (gr. Mr. T. Stevenson), whose collection was noteworthy for fresh and beautifully coloured bunches of King Edward Spencer, New Marquis, Hercules and Elsie Herbert; 3rd, Miss Scrivens, Millfield, Bexhill-on-Sea.

Six bunches, distinct.—The varieties in this class were to be selected from those placed in commerce during the last two seasons. Mr. T. Jones, Ruabon, won the 1st prize with a beautiful set, which included King White, the best white Sweet Peas in the show; his bunches of Agricola and Illuminator were also very good; 2nd, Mr. E. Cowdy, Loughall, County Armagh, whose best blooms were of May Unwin and Margaret Atlee.

Three bunches, distinct, Pink or Cream Varieties.—The bunches of Hercules, Lilian and Gladys Bell shown by Mr. Lewis S. Peters, Tregarden House, St. Austell, who won the 1st prize, were especially good; 2nd, Mr. A. Wormald, Gainsborough, who showed Elfrida Pearson.

Open Classes.

Classification Class.—This class, which required 18 varieties of separate colours, was intended to illustrate the society's colour distinctions, and to indicate the finest varieties in each colour. Sir George Trevelyan, Wallington Hall, Cambo, Northumberland (gr. Mr. E. Keith), was the most successful exhibitor, but the exhibits in the class were not very attractive; there was too great a preponderance of mauves and purples. It possessed, however, a certain educational value. The blooms of Barbara, Dobbie's Cream, Edrom Beauty, and Margaret Atlee were attractive; 2nd, F. Roper, Esq., Forde Abbey (gr. Mr. A. Shakelton).

Twelve bunches, distinct.—Exhibitors in the previous class were debarred. Mrs. Macnamara won with a magnificent collection, which included King White, Sunproof Crimson, Barbara, May Campbell, and Rosabelle; 2nd, Miss Scrivens. Sir Randolf Baker was the only exhibitor of 12 bunches in threes of cream-pink, lavender, orange and scarlet. His collection was strongest in the cream-pink section. He also won the 1st prize for 18 bunches of varieties taken from a selected list.

Three bunches of Seedling Sweet Peas.—The exhibits in this class were not very encouraging. The only first-rate variety was Royal Purple in the exhibit of Mr. R. Wright, Formby, Liverpool. Margaret, in the same exhibit, was of a good orange colour, but the petals were too thin in texture.

There was a large competition in the class for 12 bunches of waved Sweet Peas. Mr. E. Cowdy won the 1st prize with Margaret Linzie, King Alfred, and Mary Unwin, and other similar varieties; 2nd, Lewis S. Peters, Esq., who showed good blooms of Anglian Orange.

The class for 3 bunches of the Helen Pierce type was not well contested. Mrs. Farnham, The Heights, Witley, Surrey (gr. Mr. J. Bennington), showed the best bunches. E. G. Mocatta, Esq., was the only exhibitor in the

Burpee Cup class, which requires a display of waved Sweet Peas in a space of 8 feet by 3 feet. This exhibit contained a large number of splendid blooms, but was rather crowded.

District Classes (Trade excluded).

In the London class Mr. G. M. Morewood, South Ealing, won the 1st prize with a collection especially rich in crimsons. Mr. J. A. Grigor, Lea Park, Forres, N.B., won the 1st prize in the Scottish class with an exceedingly good exhibit. The Irish class, where Mrs. Macnamara won the 1st prize, was very strongly contested. The Welsh class also contained some good exhibits; Mr. T. Jones was the most successful exhibitor. In the Northern Counties class Sir George Trevelyan took the first place with a collection which contained excellent blooms of Barbara and White Queen. Sir Randolf Baker won the 1st prize in the Western Counties class, which was keenly contested. The Eastern Counties class was not so productive. Mrs. A. Hitchcock, Brook House, Tiptree, won the 1st prize. The Midland Counties class was not well filled. Lord North was awarded the 1st prize. There was a decided improvement in the Southern Counties class, in which Miss Scrivens won the 1st prize.

In the division for single-handed gardeners Mr. E. W. Humphrey, gardener to C. Hopton, Esq., Greenford, won the 1st prize with an excellent set of 12 bunches. Mr. T. Jones won the Hawlmark Cup, which is only open to amateurs who either grow their own flowers or do not employ assistance for more than three days per week. The many dinner table decorations, which were arranged on round tables 3 feet in diameter, provided a charming display. Mrs. A. G. Gentle, Little Gaddesden, who arranged Clara Curtis Sweet Peas with graceful sprays of bronze foliage and spikes of Eragrostis elegans, won the 1st prize; Mr. A. Robinson, Carshalton, won the 2nd prize with Thomas Stevenson Sweet Peas, Gypsophila paniculata, and spikes of Lagurus ovatus.

AWARDS OF MERIT.

Jean Ireland. — A beautiful Sweet Pea which differs from Mrs. C. W. Breadmore in its lemon-coloured tint and paler rose margin. Shown by Messrs. Dobbie and Co.

Royal Purple.—This very graceful variety, the colour of which is well described by its name, was the chief novelty in the class for seedling varieties last year. Shown by Messrs. Dobbie and Co.

Fiery Cross.—This brilliant flower is reserved for a Silver Medal in 1915. The colour is a glowing cerise, nearly approaching scarlet, with a touch of purple at the base of the petals. Shown by Mr. A. Malcolm.

Non-Competitive Exhibits.

Gold Medals were awarded to Messrs. Dobbie and Co., Mr. S. Bide, Messrs. Hobbies, Ltd., Messrs. R. Sydenham, Ltd., Mr. R. Bolton, Messrs. Alex. Dickson and Son; Silver-gilt Medals to Mr. James Box and Messrs. Jarman and Co.; and Silver Medals to Messrs. C. C. Morse and Co., California, Mr. H. J. Damerum, and Messrs. E. W. King and Co.

ANNUAL DINNER.

In the evening of the same day about sixty of the members were present at the Hotel Windsor at the annual dinner. The President, Mr. Hugh Dickson, occupied the chair, and the guests included Mr. W. Atlee Burpee, Mr. Eldridge Brown, and Mr. Frank Cuthbertson, from America.

In proposing the toast of "Continued Success to the National Sweet Pea Society," the chairman stated that 145 new members and 22 affiliated societies had been enrolled during the year. Although the show was not so good as usual, it was better than many had anticipated in such an unfavourable season.

Mr. William Cuthbertson proposed the toast of "The Visitors and Ladies," and Mr. Burpee replied on behalf of the visitors. He stated that he was amazed at the wonderful show of flowers, especially after seeing the effects of drought all over the country; the quality of the blooms staged was equal to the high standard that Britishers had set before the world. He referred to the death of Mr. Robert Sydenham, and he begged leave to toast his memory. Mr. Burpee stated that he was the first to send Sweet Peas to California for seed purposes, some twenty or more years ago. He forwarded to Mr. Morse five pounds of the Imperial Blue variety, and received in return no fewer than 240 lbs., being more than he could sell in five years. Mr. Frank Cuthbertson responded on behalf of the ladies, and, as a visitor from San Francisco, drew attention to the Pan-Pacific Exposition to be opened in February next. He hoped to see many Sweet Pea growers present at the show, which would be the largest exhibition of its kind ever held.

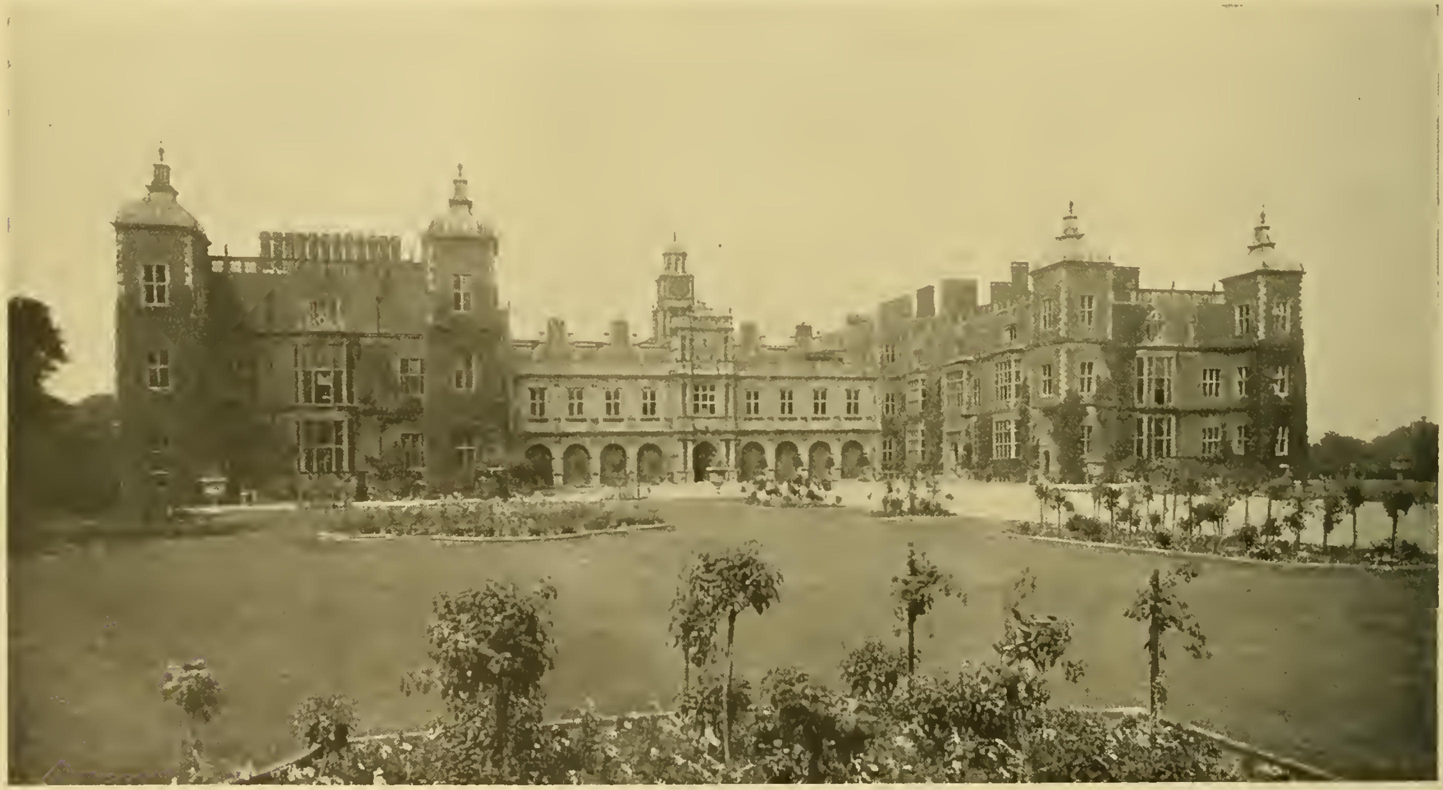
OUTING TO HINCKLEY.

Twenty members visited Hinckley on the 17th inst. for the purpose of viewing the trials at the Burbage Experimental Station. These Midland trials were instituted owing to the insistent demands of some of the more northern members, but it is evident that by discarding the southern trials the Society has gained nothing and lost much.

Two hundred and nine varieties and seedlings were under trial, and, to the astonishment of many, some of the popular standard varieties were badly mixed. John Ingman, for instance, contained not a single plant of the true variety, and even in the row of Dorothy Eckford there was a blue rogue.

Many of the seedlings under number were also more or less mixed. The three novelties that have received Awards of Merit were very good; there is no questioning the brilliancy and non-burning quality of Fiery Cross. Royal Purple is a distinct novelty, and Jean Ireland a good Picotee variety, although the colour was beginning to run. One or two other seedlings appeared to be deserving of notice, but it must be taken into consideration that the awards were made a week before, and the Floral Committee perforce judged the varieties as they appeared then, not as they were, a week later, after the continued drought and heat.

After the visitors had inspected the trials Major Hurst showed his visitors some variations that had cropped up in the culinary Pea, Laxtonian. Three years before this variety attracted his attention by its lack of trueness, and since then he has been developing single plant cultures. Many hundreds of these were under test. Several types, including the so-called Vetch type, which is almost sterile, were pointed out, but the most remarkable was a plant bearing purple flowers. Its appearance proved that Peas can be crossed by some outside agency.



Photograph by H. N. King.

Fig. 34.—HATFIELD HOUSE, HERTFORDSHIRE, THE SEAT OF THE MARQUESS OF SALISBURY, G.C.V.O

(See "Horticultural Club," p. 76.)

Major Hurst had tracked down the male parent of this plant, but another season must elapse before he can decide whether the plant carries any Laxtonian blood.

NATIONAL CARNATION AND PICOTEE (SOUTHERN SECTION).

July 17.—The annual show of the above society, which was held in Vincent Square on this date, did not attract a large attendance. In this early season the date was a little too late for the finest blooms to be shown

First Division.

Flowers Shown on Cards.

Twelve Carnation blooms, Bizarres and Flakes, distinct.—Mr. H. R. Taylor, Cheam, won the 1st prize with a very even set of blooms. His best Bizarres were George Morland, Armourer, Opal and Amersham; whilst Gordon Lewis, John Wormaldson and a pink seedling were the best Flakes; 2nd, Mr. J. Douglas, Great Bookham.

Twelve Carnation blooms, Selfs.—The competition was closer in this class, where Mr. C. Blick, Hayes, Kent, won the 1st prize by reason of better form and clearer colours; such varieties as Daffodil, Rosy Morn, Mrs. George Marshall, Ashantee, Fujiyama and Bookham White being delightful specimens; 2nd, Mr. J. Douglas.

Twelve Carnation blooms, Fancies.—There was but little to choose between the 1st and 2nd prize collections in this class. Mr. J. Douglas, who was placed 1st, had exceedingly fine blooms of Lord Steyne, Linkman, Edenside, and Pasquin, whilst Mr. C. Blick excelled with Donald McDonald, Linkman, Cyclops and Medusa.

Twelve Picotee blooms, white ground.—Mr. H. Taylor won the 1st prize. His narrow-edge blooms were Catherine, Favourite, and a purple seedling. Amongst the broad-edge flowers Mrs. Twist was especially good, as also was a brick-red seedling amongst those with medium margins; 2nd, Mr. J. Douglas.

Twelve Picotee blooms, yellow ground.—Mr. J. Douglas showed a very good collection in this class, and was awarded the 1st prize. Onward (narrow edge), Agnes (medium) and Marguerite Lemon (heavy) were especially good; 2nd, Mr. H. R. Taylor, who had well-formed blooms of Gloria (medium) and Santa Claus (heavy).

Flowers as Grown.

These classes were much more attractive than the foregoing to the general visitor; the vases of blooms accompanied by plentiful foliage and flower-buds made a goodly show. Mr. J. Douglas won the 1st prizes in the classes for Selfs, Fancies (other than white ground), white-ground Fancies and yellow-ground Picotees. In these classes 3 blooms each of 4 varieties were shown; and Mr. H. Lakeman, Thornton Heath, won the 2nd prizes, except for white-ground Fancies, where Mr. C. Blick received the award.

In the class for 9 varieties of Selfs, Fancies and yellow-ground Picotees, Mr. J. Douglas won the 1st prize with good vases of such sorts as Miss Willmott, Elizabeth Shiffner and Czar; 2nd, Mr. C. Blick, who had splendid examples of Fujiyama and Rosy Morn.

Second Division.

Flowers on cards.—Mr. J. Fairlie, Acton, was the only exhibitor of Bizarres and Flakes, and received the 1st prize. Mr. W. H. Parton, Moseley, won the 1st prizes for Selfs and Fancies, and Mr. G. D. Ford, Acock's Green, was similarly successful in two Picotee classes.

Flowers as grown.—The competition in these classes, which require 3 blooms of 1 variety, was the best in the show. Mr. W. H. Parton won the 1st prizes for pink or rose Selfs (showing Rosy Morn), white Selfs (Bookham White), and white-ground Fancies (The Nizam). Miss Shiffner, Lewes, was the most successful exhibitor with dark-red or maroon Selfs (Mrs. G. Marshall), and buff or terra-cotta Selfs (Elizabeth Shiffner). Mr. R. Morton won 1st prizes for yellow Selfs (Daffodil), yellow-ground Picotees (F. W. Goodfellow), and yellow or buff ground Fancies (Linkman). Mr. G. D. Ford won the 1st prizes for red or scarlet Selfs (Fujiyama) and any other variety Self (Duchess of Wellington). Mr. W. H. Parton, Moseley, showing a good selection, was awarded the 1st prize for 6 distinct varieties, 2 vases of each, and he also won the Martin Smith Memorial Challenge Cup with a splendid collection of such varieties as Edenside, Rosy Morn and Becky Sharp.

Open Classes.

In the following 10 classes, 9 blooms of one variety with Carnation foliage, were shown in separate vases. The 1st prizes were won by Mr. W. H. Parton for pink or rose Selfs (Rosy Morn) and yellow-ground Picotees (Exquisite); Mr. J. Douglas, for white Selfs (Bookham White), dark-red Selfs (Mrs. G. Marshall), scarlet Selfs (Fujiyama), any other variety (Purple Emperor); Mr. H. Lakeman, for yellow-ground Picotees (Father O'Flynn) and Fancies other than yellow or buff ground (The Bride); and Miss Shiffner, for buff Selfs (Elizabeth Shiffner).

The best vase of seedling Carnations was shown by Mr. V. Charrington, Hever.

Premier Blooms.

Carnations on Cards.

Bizarre: Armourer, by Mr. H. R. Taylor.
Flake: Gordon Lewis, by Mr. H. R. Taylor.
Fancy: Linkman, by Mr. C. Blick.
Selfs: Maud Allan, by Mr. W. H. Parton.

Picotees on Cards.

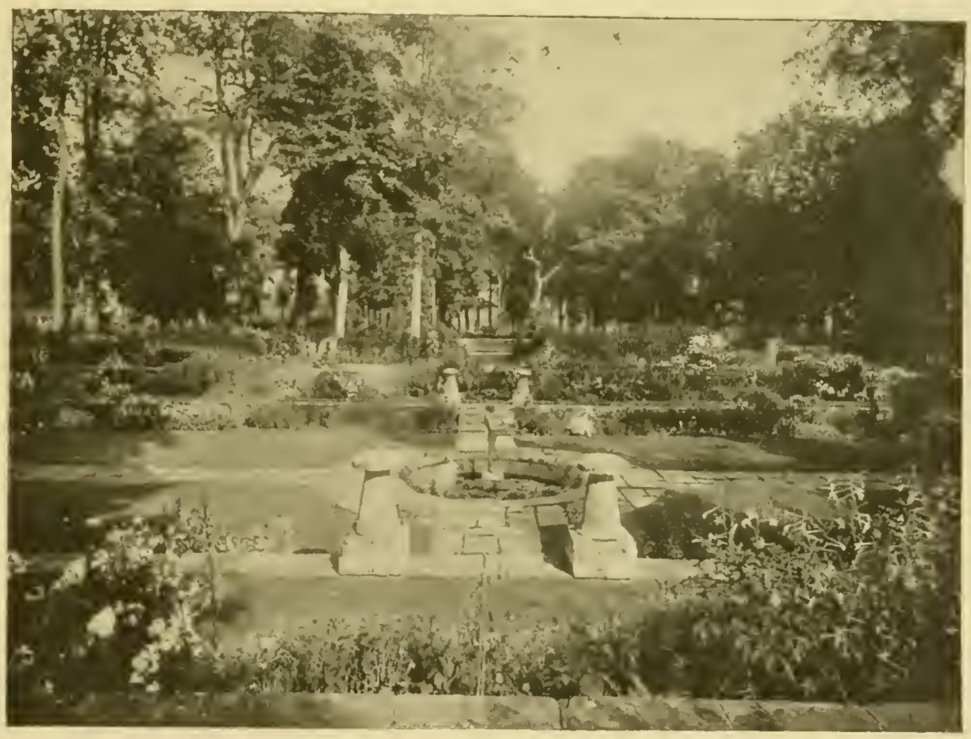
Yellow, heavy edge: Her Majesty, by Mr. C. Blick.
Yellow, light edge: Eclipse, by Mr. G. D. Ford.
White, heavy edge: Radiant, by Mr. J. Douglas.
White, light edge: Catherine, by Mr. H. R. Taylor.

Carnations as Grown.

White-ground Fancy: Lass O'Gowrie, by Mr. C. Blick.
Fancy: Becky Sharp, by Mr. W. H. Parton.
Self: Bookham White, by Mr. J. Douglas.

Picotees as Grown.

Yellow, heavy edge: F. W. Goodfellow, by Mr. Morton.
Yellow, light edge: Onward, by Mr. W. H. Parton.



Photograph by H. N. King.

Fig. 35.—THE SUNKEN GARDEN AT BALLS PARK.

(See "Horticultural Club"—p. 76.)

BIRMINGHAM HORTICULTURAL.

July 16, 17, 18.—The summer show of this Society was held in Handsworth Park on the above dates. Hitherto the show has been a two-day fixture, but on this occasion it continued for three days. The large groups of plants in the open class were very fine. Roses, too, were good, and better border Carnations have never been seen at Handsworth. Unfortunately, it was not stated in the schedule if Carnation flowers were to be shown as grown with buds and foliage, or whether dressed or undressed flowers on boards were admissible, consequently both methods of staging were adopted. This omission gave rise to discontent among some of the exhibitors. Tree Carnations were not extensively shown, but the display which gained a Gold Medal, as well as the Silver Cup offered for the best non-competitive exhibit in the show, was much appreciated.

With a few exceptions, Sweet Peas were of indifferent quality, owing to the effects of the recent trying weather. Although not numerically strong, fruit was fairly good, especially the exhibits from Hugh Mitchell, Esq., of Droitwich, who was very successful in this department.

The Lord Mayor of Birmingham presided at the opening ceremony, which was performed by Lady Calthorpe.

Plants (Open).

The principal class was for a group of plants arranged in a space of 300 square feet. Last year's exhibitors were the only competitors on this occasion, and each adopted the same style of arrangement. The now familiar rustic arch, decorated with flowering and foliage plants, crowned with a specimen Palm, marked the centre of the group, which faced two ways. The 1st prize was well won by Messrs. James Cypher and Sons, Cheltenham, whose artistically-arranged group contained a fine variety of richly-coloured Codiaeums, Pandanus Veitchii, Begonia Rex varieties, Alocasias, Caladiums, Nandina domestica, Ferns and Selaginellas. Of flowering plants, Phalaenopsis, with large sprays of bold flowers, handsome spikes of Oncidiums and Odontoglossums, together with Vanda coerulea and Cypripediums, were the principal Orchids employed. Pleasing colour was provided by the introduction of Clerodendron fallax, Kalanchoe flammea and Ixoras, which were used with excellent effect. Tall, graceful specimens of Humea elegans placed near the centre arch gave a lightness and grace that was greatly admired. The group was edged with the dainty-leaved Caladium argyrites, the rich orange-berried Nertera depressa and Selaginella; 2nd, Sir GEORGE H. KENRICK, Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), with a nicely-arranged group composed largely of well-grown and beautifully-coloured Codiaeums and other foliage plants. Although fewer flowering plants were displayed in Sir George's group than in that of Messrs. Cypher's, some splendid specimens of Epidendrum vitellinum, together with Oncidiums and Odontoglossums, were well shown; 3rd, Mr. W. R. MANNING, Dudley.

Of the three exhibits in a class for 12 stove or greenhouse plants, of which no fewer than 6 were to be in flower, the 1st prize was also won by Messrs. JAMES CYPHER AND SONS, who had huge, well-flowered specimens of Clerodendron Balfouri, Ixora Williamsii, Statice intermedia and Bougainvillea Sanderiana. The best of the foliage plants were Codiaeum Flambeau and Kentia australis; 2nd, J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), whose best flowering specimen was Clerodendron Balfouri; 3rd, Mr. W. R. MANNING.

Photograph by H. N. King.

FIG. 36.—ROSES AND LILIES AT BALLS PARK.

(See report of Horticultural Club excursion—p. 76.)

The class for 6 Caladiums only attracted one exhibitor, viz., J. A. KENRICK, Esq., who was awarded 1st prize.

In a class for Rock and Water-gardens, competition was disappointing. The space allowed was 30 feet by 30 feet, against a background of trees and shrubs in the open air. The 3rd prize was awarded to THE GROVE LANE NURSERIES, Handsworth, who had an assortment of dwarf shrubs and a variety of flowering plants.

The best exhibit of Fuchsias came from C. A. PALMER, Esq., Handsworth (gr. Mr. A. H. Ford), who was deservedly awarded the 1st prize; 2nd, J. A. KENRICK, Esq.

CUT FLOWERS (OPEN).

Only one exhibit was made in a special new class for hardy flowers, arranged to represent a growing flower border, in a space of 20 feet by 10 feet. Vases were allowed, but they were not to be more than 18 inches above the ground line. No duplicate or mixed bunches were admissible except as an edging, which was restricted to flowers of one colour. The 3rd prize was awarded to Messrs. HOLDER AND TILT, Erdington, who showed Oriental Poppies, Delphiniums, Oenotheras, Erigeron speciosus and Chrysanthemum maximum.

ROSES.

The leading class for Roses was for a collection of varieties arranged on a table space of 20 feet by 5 feet. Messrs. GUNN AND SONS, Olton, Birmingham, were the only contestants, and they were awarded the 1st prize for a magnificent display, in which tall arches and pillars clothed with flowers stood over mounds, baskets and vases containing blooms of high merit. The most striking varieties were Irish Elegance, Juliet, Frau Karl Druschki, Duchess of Wellington, Lady Hillingdon, Gottfried Keller and Ramblers.

Mr. JOHN MATTOCK, Oxford, won the 1st prize for a dozen bunches of garden Roses. He showed beautifully fresh flowers of Madame Segond Webber, General Macarthur, Lady Godiva, Gustave Regis, Hiawatha and a superb bunch of Mrs. Herbert Stevens; 2nd, Mr. W. T. MATTOCK, Oxford, who had Betty, Pharisaer, Blush Rambler and Lady Gay in splendid condition; 3rd, Messrs. GUNN AND SONS.

There were eight exhibits of Roses in bowls, but none of outstanding merit.

Forty-eight blooms, distinct.—Mr. JOHN MATTOCK took the lead in this class with superb specimens of Earl of Gosforth, Her Majesty, Ben Cant, Edward Mawley, Avoca, Comtesse de Turenne, Mrs. W. E. Miller, Lyon, Comtesse de Raimbaud, Mrs. A. E. Coxhead, Hugh Dickson, Suzanne Marie Rodocanachi, Claudius and W. E. Lippiatt; 2nd, Messrs. PERKINS AND SONS, who showed lovely flowers of Mildred Grant, Mrs. Cornwallis-West, Lieutenant Chauré, Captain Hayward and M. M. Soupert; 3rd, Mr. W. T. MATTOCK.

Twenty-four blooms, distinct. — The last-named exhibitor was placed first with delightfully fresh and substantial blooms of Gloire de Chédane Guinoisseau (premier bloom), Alfred Colomb, Marie Baumann, George Dickson, Lyon, Fisher Holmes, Mrs. A. E. Coxhead, Gustave Piganeau, Frau Karl Druschki, William Shean, Claudius and Caroline Testout; 2nd, Messrs. PERKINS AND SONS; 3rd, Mr. JOHN MATTOCK.

Eighteen blooms, distinct.—The best of 5 exhibits in this class came from Mr. W. T. MATTOCK, who had exquisite specimens of Mrs. A. E. Coxhead, Frau Karl Druschki, J. B. Clarke, Gloire de Chédane Guinoisseau, Horace Vernet, Dr. O. Brown, Mrs. J. H. Walsh and Ulrich Brunner; 2nd, Messrs. PERKINS AND SONS.

Twelve blooms of Tea varieties, distinct.—Only 4 exhibits were placed before the judges, who awarded the 1st prize to Messrs. PERKINS AND SONS, who showed handsome flowers of Molly Sharman Crawford, Dean Hole, Mrs. Foley Hobbs, Harry Kirk and Mrs. Herbert Stevens. In Messrs. GUNN AND SON'S 2nd prize stand Hugo Roller, Madame Jules Gravereaux and W. R. Smith were noteworthy; 3rd, Mr. W. T. MATTOCK.

CARNATIONS (OPEN).

Tree Carnations were not numerous, but border varieties were strongly represented. The CLURY NURSERIES, Langley, Bucks, were the only exhibitors of Tree Carnations, occupying a space of 6 feet by 4 feet. They showed large bunches of Enchantress, British Triumph, Mrs. C. W. Ward, Sunstar, White Perfection and Mrs. T. W. Lawson; 2nd prize awarded.

There were 6 grand entries in the class for 12 self-coloured Carnations, 1st, Mr. F. W. GOODFELLOW, Walsall, whose large, much-dressed flowers, arranged on white paper collars, were of surprisingly good quality. Messrs. A. R. BROWN, LTD., King's Norton, were awarded the 2nd prize for blooms shown as grown, with Carnation buds and foliage, which made a very pretty show. The best varieties included specimens of John Knox, H. J. Thornton, Mrs. Robert Berkeley, Cardinal and Mrs. George Marshall; 3rd, Mr. W. H. PARTON, Moseley (gr. Mr. G. R. Rudd).

In a class for 12 yellow-ground fancy Carnations, Mr. F. W. GOODFELLOW was again placed first with very large, heavily-built blooms. The premier border Carnation, Linkman, was included in this very fine stand of dressed flowers; 2nd, Messrs. A. R. BROWN, LTD., whose flowers were shown naturally, and were much admired. The varieties Hercules, Bombardier, Hera, Watchman, Linkman, Sam Weller and Donald McDonald were of exceptional merit.

In the next class, which was for 12 Fancy Carnations other than yellow or buff ground varieties, Messrs. A. R. BROWN, LTD. excelled with superb flowers of Lass o' Gowrie, Captain, The Nizam, Millie, Flirt, Rhoda, Mrs. Andrew Brotherston, Gipsy Love, Salome, The Bride, Melrose Beauty and Octavia; 2nd, Mr. R. BRUCE WAITE, Harborne.

The last-named exhibitor beat Messrs. A. R. BROWN, LTD., in the next class, which was for 12 Flake and Bizarre Carnations, with exquisitely-formed, well-coloured flowers. The most noteworthy varieties were George Melville, J. S. Hedderley, Peter Pan, Master Fred, Sportsman and Gordon Lewis. Messrs. BROWN'S best flowers were Claude Lorraine, Cleopatra, Guardsman and Flamingo.

Three competitors showed in the next class, which was for 12 white-ground Picotees. Messrs. A. R. BROWN, LTD., who won the 1st prize, exhibited beautifully clean, even-sized, stout-petalled flowers of John Smith, Favourite, Dorothy, Edmund Shorthouse, Muriel Stevens, Mrs. Cooper, Mrs. G. Chaundy, Lavinia and W. H. Twist; 2nd, Mr. R. BRUCE WAITE; 3rd, Messrs. W. PEMBERTON AND SON.

In the corresponding class for twelve yellow-ground Picotees, Mr. F. W. GOODFELLOW took the lead with dressed flowers displayed on paper collars. 2nd, Mr. W. H. PARTON, whose flowers were well set up in vases, relieved with Carnation buds and foliage.

MISCELLANEOUS CUT FLOWERS (OPEN).

The best of two exhibits in a class for a dozen bunches of Violas came from Mr. H. ALLEN, Handsworth, whose handsome flowers were well arranged.

For a collection of Sweet Peas occupying a space of 20 feet by 4 feet Messrs. HERD BROTHERS, Penrith, and Messrs. E. W. KING & Co., Coggeshall, Essex, were placed 1st and 2nd respectively. In a similar but smaller class, Sir ROBERT GRAHAM, Bart., Carlisle (gr. Mr. G. F. Hallett), won the 1st prize with excellent flowers.

Messrs. T. B. GROVE AND SONS, Sutton Coldfield, gained the 1st prize for twenty-four bunches of hardy border flowers, in not fewer than eighteen varieties. The specimens exhibited were particularly good, and displayed to the best advantage.

The first prize in a class for one bride's bouquet and two bridesmaid's bouquets was won by Messrs. Perkins and Sons. The bride's bouquet consisted almost entirely of Orchids, and pink Carnations were used in the other two bouquets.

Messrs. W. Pemberton and Son, Bloxwich, and Mr. J. Bastock, Moseley, won the 1st and 2nd prizes respectively in a class for the most tasteful arrangement of Pansies and Violas.

Tables Decorated with Flowers and Fruit.

There were thirteen exhibits in a class for tables decorated with flowers (Orchids excluded). 1st, Sir Robert Graham, Bart., Carlisle (gr. Mr. G. F. Hallett), who had yellow and deep heliotrope-coloured Carnations. Relief was afforded by the introduction of Selaginella and Asparagus. 2nd, Mrs. E. Winchester, Rubery, who used large, bright pink Carnations.

In another class for dinner-tables decorated with fruit and flowers, and laid for six persons, H. Mitchell, Esq., Droitwich (gr. Mr. C. Crooks), was the only exhibitor. He showed Peaches, Nectarines, Cherries, Melons and Grapes. The decorations consisted of pale pink Carnations.

A new class for table decorations reserved for ladies was well contested. The first prize, a solid silver tea service, value 15 guineas, presented by Mrs. William A. Cadbury, was won by Mrs. Macdonald, whose light and graceful arrangement of Oncidiums, Epidendrum vitellinum, Phalaenopsis and pale-coloured Cattleyas, relieved with sprays of well-coloured Selaginella and trails of Ceropegia Woodii, was greatly admired.

Plants (Open to Gentlemen's Gardeners and Amateurs.)

Competition was weak in most of these classes. The most successful exhibitor was J. A. Kenrick, Esq., who won the 1st prize for a group of plants occupying 15 feet by 8 feet, with a single frontage. The group, which was beautifully arranged, included Orchids, Kalanchoes, Amaryllis, Crassulas, Trachaeleum coeruleum, Caladiums, Abutilons, Clerodendron fallax, Humea elegans, reddish-leaved Codiaeums, and Palms. The same exhibitor was awarded 1st prizes for (1) six stove or greenhouse plants, (2) six exotic Ferns, (3) three Zonal Pelargoniums, (4) three Ivy-leaved Pelargoniums, (5) collection of Ferns, and (6) twelve flowering plants.

J. A. Kenrick, Esq., Harborne (gr. Mr. R. Usher), won the 1st prizes in classes for (1) six single Begonias, (2) six double Begonias, and (3) six table plants. C. A. Palmer, Esq., Handsworth (Mr. A. H. Ford), took the lead in classes for (1) small group of plants, (2) three Liliums, (3) six pots of Verbenas, and (4) twelve Streptocarpus. The Verbenas and Streptocarpus were uncommonly good.

Fruit (Open).

In a class for a collection of fruit displayed on separate tables, 6 feet by 4 feet, there were three exhibits. 1st, Hugh Mitchell, Esq., Droitwich (gr. Mr. C. Crooks), who showed Black Hamburgh, Madresfield Court, and Muscat of Alexandria Grapes, excellently coloured James Grieve and Beauty of Bath Apples. Givon's Late Prolific and Waterloo Strawberries. Humboldt Nectarine, Dymond and Bellegarde Peaches, July Greengage, Royal Duke Cherries and a pair of Melons. Carnations were used as decorations. 2nd, Hugh Andrews, Esq., Winchcombe (gr. Mr. J. R. Tooley), whose best dishes were Grapes, Peaches, and Figs. 3rd. Mr. N. Buxton, Nottingham.

Hugh Mitchell, Esq. (gr. Mr. C. Crooks), also won 1st prizes for (1) two bunches of black Grapes, (2) two bunches of white Grapes, (3) scarlet-fleshed Melon and (4) one dish of Strawberries. Mr. N. Buxton showed the best white-fleshed Melon, and Sir Francis Lloyd, Oswestry (gr. Mr. W. T. Staward), won 1st prizes for (1) Red Currants and (2) Gooseberries. The best dish of Black Currants was exhibited by F. E. Muntz, Esq., Hockley Heath (gr. Mr. H. S. Foster).

Vegetables.

In a class for nine kinds of vegetables there were five exhibits. 1st, Hugh Andrews, Esq., Winchcombe (gr. Mr. J. R. Tooley); 2nd, F. E. Muntz, Esq. (gr. Mr. H. S. Foster).

Special prizes were offered by Messrs. Webb and Sons for six kinds of vegetables. 1st, F. E. Muntz, Esq. (gr. Mr. H. S. Foster), who also secured the leading prize offered by Messrs. Dickson and Robinson for six kinds of vegetables.

A handsome silver challenge cup, presented by the proprietors of the *Birmingham Daily Mail*, was offered for the best display of produce, including flowering plants, cut flowers, fruit and vegetables, in a space of 8 feet by 5 feet. The conditions attached to the cup were that the exhibitor must not employ help more than one day per week on an average throughout the year. The winner was Mr. A. T. Rainbow, Northfield, who showed a comprehensive collection.

Honorary Exhibits.

Gold Medals were awarded to Messrs. E. W. King and Co., Coggeshall, Essex, for a large collection of Sweet Peas; Messrs. Fred Smith and Co., Woodbridge, for a splendid collection of hardy flowers, displayed on low staging. Large bunches of Gaillardias, Liliums, Heucheras, Phloxes, Heleniums, Tritomas and Gladiolus were prominent features; Messrs. Webb and Sons, Stourbridge, for a beautifully arranged collection of choice fruit, vegetables and flowers; the Guildford Hardy Plant Nursery, Guildford, for a nicely constructed and well-planted rock garden; Messrs. Hewitt and Co., Solihull, for hardy flowers in great variety; Messrs. H. B. May and Sons, Upper Edmonton, for a collection of choice Ferns; Messrs. Dobbie and Co., Edinburgh, for a large display of Roses; the Clury Nurseries, Langley, for a splendid group of Tree Carnations.

A Silver Medal was also awarded to this group as being the best non-competitive exhibit in the show.

Silver-Gilt Medals were awarded to Messrs. A. R. Brown, Ltd., King's Norton, for Roses in pots and cut blooms; Messrs. J. Cheal and Sons, Crawley, for a pretty rock garden; Messrs. W. H. Simpson and Sons, Birmingham, for new Antirrhinums and miscellaneous border flowers; Mr. H. N. Ellis, for Cacti and Ferns.

Silver Medals were awarded to Mr. Douglas Leigh, Hampton-in-Arden, for Roses; Messrs. Isaac House and Son, Westbury-on-Trym, for a very bright group of hardy cut flowers and uncommon hardy plants in pans; Mr. John Barnett, King's Norton, for Roses; Messrs. Pipers, London, for hardy cut flowers and Alpine plants; Messrs. Gunn and Sons, Olton, for a pleasing arrangement of fragrant Phloxes; Messrs. Holder and Tilt, Erdington, for Sweet Peas; Messrs. H. J. Milner and Sons, Handsworth, for beautifully fresh Violas.

Bronze Medals were awarded to The Grove Lane Nurseries, Handsworth, for Violas; and to the Bournville Village Trust, Birmingham, for Roses.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

June 18.—*Committee present*: Z. A. Ward, Esq. (in the chair), Messrs. R. Ashworth, J. J. Bolton, J. C. Cowan, J. Cypher, J. Evans, J. Howes, A. J. Keeling, J. Lupton, D. McLeod, W. J. Morgan, W. Shackleton, H. Thorp, G. Weatherby and H. Arthur (secretary).

Col. J. Rutherford, M.P., Blackburn (gr. Mr. Lupton), was awarded a large Silver-gilt Medal for an excellent group, composed of Miltonias of the vexillaria section and Cattleyas.

R. Ashworth, Esq., Newchurch (gr. Mr. Gilden), staged a mixed group, for which a Silver-gilt Medal was awarded.

Wm. Thompson, Esq., Walton Grange (gr. Mr. Howes), was also awarded a Silver-gilt Medal for a group of choice Odontoglossums.

Messrs. Hassall and Co., Southgate, London, was awarded a large Silver Medal for a mixed group.

Other exhibitors were Messrs. A. J. Keeling and Sons, Bradford; Mr. W. Shackleton, Highfield, Bradford; H. J. Bromilow, Esq., Rann Lea (gr. Mr. Morgan; and A. J. Oakshott, Esq., Bidston (gr. Mr. Findlow).

AWARDS.

First-class Certificates.

Laelio-Cattleya Cicely (L. Latona × C. Mossiae) and *Odontioda Brewii* "*Rann Lea*" *var.*, a large flower of good shape, with distinct lip, both from H. J. Bromilow, Esq.

Odontoglossum eximium var. "*Excelsior*," a round flower of purple colour, with light edging; *O. Dorothy Arkle*, a large flower with brilliant markings, both from Wm. Thompson, Esq.

O. Jane Leggatt, a large flower of good shape and substance, from A. J. Oakshott, Esq.

Miltonia Charlesworthii "*Beardwood*" *var.*, from Col. J. Rutherford, M.P.

Awards of Merit.

Laelio-Cattleya Fascinator var. "*Samson*," *L.-O. Martinettii var.* "*Ruby*," *Odontoglossum* × *Waterloo*, *Cypripedium Greyii* (C. niveum × C. Godefroyae), "*Ashlands*" *var.*, all from R. Ashworth, Esq.

Odontoglossum × *Peacock* and *O. Christopher Guest*, both from Wm. Thompson, Esq.

O. crispum Catherine Oakshott, from A. J. Oakshott, Esq.

Cattleya Mossiae splendens, from Col. J. Rutherford, M.P.

Laelio-Cattleya Canhamiana Rex "*Hassall's*" *var.*, from Messrs. Hassall and Co.

SALTAIRE ROSE.

July 14, 15.—The dry weather that has been so characteristic of the season had its effect upon the blooms staged at this show, for many were lacking in substance, but the colour in some varieties was intense. Messrs. Alex. Dickson and Sons won all the 1st prizes in the first eight classes, and also carried off the Society's one hundred guinea Northern Championship Rose Bowl and Gold Medal, the President's Silver Rose Bowl, and the Society's Silver Medal

Sweet Peas were a great feature, both in the competitive classes and traders' exhibits. Large stems of cut flowers and foliage plants were also exhibited.

Roses.

For 60 blooms, distinct, the 1st prize was won by Messrs. Alex. Dickson and Sons, Newtownards, for a remarkably fine lot of flowers, a selection of the best varieties including Bessie Brown, White Maman Cochet, Lyon Rose, Lady Maureen Stewart (new), Dean Hole, Duchess of Sutherland, Mrs. Fred Searle (new), George C. Waud, Hugh Dickson, Conway Jones (new), Mrs. Arthur Coxhead, H. V. Machin, Sir E Carson (new), George A. Hammond (new) and George Dickson; 2nd, Messrs. Harkness and Co., Hitchin; 3rd, Mr. John Pigg, Royston.

Messrs. Alex. Dickson and Sons were the only exhibitors in the class for 7 baskets of cut Roses, distinct varieties, and were awarded the 1st prize.

For 16 varieties, distinct, 3 trusses of each variety, the 1st prize was won by Messrs. Alex. Dickson and Sons, who showed several new varieties, such as Edward Bohane, Conway Jones, H. V. Machin and Margaret Walker: 2nd, Messrs. Harkness and Co., Hitchin; 3rd, Mr. John Pigg, Royston.

Messrs. Alex. Dickson and Sons were also placed 1st in the classes for (a) 5 baskets of Roses, in 5 varieties; (b) 24 blooms, distinct; 2nd, Messrs. Harkness and Co., Hitchin; (c) 12 new Roses, distinct, 2nd, Harkness and Co.; (d) one basket of a light-coloured variety, 2nd, Arthur H. Rigg, Baildon; (e) a basket of a dark variety.

Mr. Conway Jones, Gloucester, was the most successful exhibitor in the amateur classes, winning five 1st prizes.

Sweet Peas.

The best exhibit of 18 bunches, distinct varieties, was shown by Mr. J. H. Nichols, Menston; 2nd, Mr. J. Smellie, Glasgow, who excelled in the class for 12 bunches, distinct, and 6 bunches, distinct.

The best 6 bunches of new varieties were shown by Mr. T. Burnett, Shipley, with Helen Chetwynd, Mrs. McIlwrick, Steeton, King White, Mrs. Jessop and Mrs. J. Emmett; 2nd, Mr. J. Smellie.

Pansies and Violas.

In the class for 24 varieties of Fancy Pansies, Mr. S. Bairstow, Thornton, was placed 1st, and Mr. J. Smellie 2nd.

Mr. S. Bairstow won in the class for 12 distinct varieties of Fancy Pansies; 2nd, Mr. J. Harker, Ambler Thorn.

Violas in 24 distinct varieties were best shown by Mr. H. W. Whiteley, Allerton; 2nd, Mr. Ramsden; whilst Mr. F. E. Sutcliffe, Allerton, excelled in the class for 6 sprays of Violas, in which Messrs. Seagrave and Co., Sheffield, were 2nd.

Decorative Classes.

The best basket of Roses was shown by Mr. W. Webster, Huddersfield; the best vase of Sweet Peas by Mr. G. H. Garnett.

The best table decorated with Roses and foliage only was arranged by Mr. J. Bayley; 2nd, Mrs. Thompson Barber, Bradford.

Non-Competitive Exhibits.

Gold Medals were awarded to Messrs. Mansell and Hatcher, Rawdon, Leeds, for Orchids; Messrs. John Peed and Son, Norwood, for Caladiums; Mr. Robert Bolton, Carnforth, for Sweet Peas; Messrs. Artindale and Son, Sheffield, for Violas; Messrs. W. and J. Brown, Peterborough, for Roses; Messrs. Young and Co., Cheltenham, for Carnations.

Silver-gilt Medals to Messrs. Dobbie and Co., Edinburgh, for Roses; Messrs. E. J. Batchelor and Sons, Harrogate, for Roses, Hydrangeas, Lilies, and other flowers; Mr. W. Miller, Wisbech, for hardy flowers: Messrs. Castle and Co., for hardy Ferns; Messrs. Gibson and Co., Bedale, for hardy flowers; Mr. A. H. Rigg, Baildon, for Roses; and Mr. W. R. Tranmer, Hull, for Violas.

Silver Medals to Messrs. Mawson Bros., Windermere, for hardy flowers; Messrs. Seagrave and Co., Sheffield, for Violas; Messrs. Sam Dean and Son, Bradford, for Violas and Carnations; and Mr. T. H. Gaunt, Farsley, Leeds, for rockwork.

Bronze Medal to Mr. John Brook, Bradford, for hardy flowers.

GLOUCESTERSHIRE ROSE AND SWEET PEA.

July 14.—The twenty-sixth annual exhibition of the Gloucestershire Rose and Sweet Pea Society was held on the Spa Cricket Ground, Gloucester, on Tuesday, the 14th inst. There was a remarkably good show, the quality being far beyond general expectations. The exhibition had been postponed ten days in consequence of the early June frosts, and the postponement proved a very fortunate circumstance so far as the beauty of the exhibition was concerned. There were 106 entries in the Rose classes and 105 in those for Sweet Peas.

A new and outstanding feature of the show was the nurserymen's displays of Roses on spaces 12 feet long and 6 feet in height, in which there were five entries. The premier award was won by Mr. Elisha J. Hicks, Twyford, Berkshire, the feature of whose display was the number of new seedling Roses. In addition to gaining the 1st prize Mr. Hicks was awarded Silver Medals by the Society for two new seedlings, Princess Mary (single, vivid crimson) and Mrs. George Norwood (scented, deep rose-pink). Messrs. John Jefferies and Son, Cirencester, won the 2nd prize.

In the nurserymen's classes Messrs. John Mattock, Oxford, were premier prizewinners. They showed to perfection such new H.T. varieties as Coronation (silver pink), King George (deep crimson), Claudius (rosy pink), and British Queen (pearly white). The King's Acre Nurseries, Ltd., Hereford; Mr. Henry Drew, Longworth, Berks; Messrs. James Townsend and Sons, Worcester; and Messrs. Fraser and Son, Malvern, also won prizes in the nurserymen's classes.

The President's (Lady Holford) Silver Challenge Cup in the open amateur class for 36 varieties was won by Mr. Conway Jones, Heathcote, Gloucester, who also won four 1st prizes in the open amateur competition. The Silver Challenge Cup presented by the Mayor and Corporation for 9 varieties shown by Gloucester City amateurs was awarded to Mr. C. L. Walker. Mr. Conway Jones' Silver Challenge Cup, open to Gloucestershire amateurs for 12 varieties, was won by Mr. W. Jarratt Thorpe, of Heathcote, who also won the National Rose Society's Silver Medal for the best bloom in the class with the variety Hugh Dickson. Mr. G. R. Bonnor, of Barnwood, Gloucester, won Messrs. Jefferies and Son's Silver Challenge Cup in the Gloucestershire amateur class for 9 Tea or Noisette varieties. Mr. J. G. Orpin, Gloucester, was awarded the National Rose Society's Silver Medal for his bloom of Madame Jules Graveraux, and Mr. T. A. Bishop, Gloucester, a similar honour for Charles Lepase.

The entries in the open classes for Sweet Peas were better than usual. In the open amateur class Sir Randolf Baker, Bart., M.P., Blandford, Dorset, won the challenge cup given by Mrs. W. Jarratt Thorpe for 24 varieties, and he was also awarded the National Sweet Pea Society's Silver Medal for the best bunch of Sweet Peas in the show with a vase of R. F. Felton. The Edwin Lea Challenge Cup offered for the best display by city and county amateurs was won by Mr. C. P. Allen, M.P., Stroud (gr. Mr. Edwin Horwood). The Winfield Challenge Cup for amateurs was awarded to Mr. W. Jarratt Thorpe.

SCOTTISH HORTICULTURAL.

July 7.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on the 7th inst. Mr. King, the president, was in the chair, and there was an attendance of sixty-five members.

The evening was devoted to the reading of short papers by juniors on subjects of their own selection, for which prizes were offered by the president. The 1st prize, a Gold Medal, was awarded by the judges, Dr. Smith and Messrs. Whytock and M'Hattie, to Edwin G. Extence, Stoke Bishop, Bristol, for a paper on Perpetual-flowering Carnations; the 2nd to Chas. T. Macintosh, Quarter House Gardens, Stirlingshire, for a paper on the Herbaceous Border; the 3rd to Wm. F. Cumming, Earnock House Gardens, Hamilton, for a paper on "The Cultivation of Roses," and the 4th to Joseph Ames, Earnock House Gardens, Hamilton, for a paper on the Writing of Plant Names. Walter Fleming, Mount Melville Gardens, St. Andrews, was Highly Commended for a paper on Methods of Propagation, and D. Anderson, Edinburgh, and Wm. Gladstone, Ayton Castle Gardens, Berwickshire, were Commended for papers on The Upkeep of Garden Woodwork and the Cultivation of Chrysanthemums for Large Blooms respectively.

The exhibits were :—Lilium pardalinum and L. Washingtonianum, exhibited by Messrs. Dicksons and Co., Edinburgh; collection of Delphiniums, exhibited by Mr. John Downie, Edinburgh (a Certificate of Merit was awarded to a blue seedling named Miss Downie); Philadelphus Virginale and P. Bouquet Blanc, exhibited by Mr. J. Porter, Davidsons Mains; Chrysanthemum Craigmillar from the open, exhibited by Mr. D. Armstrong, Kirknewton House Gardens, Midlothian; and Strawberries, exhibited by Mr. G. R. Proudfoot, Galashiels.

CARDIFF HORTICULTURAL.

July 22 and 23. — The twenty-sixth annual show, held in connection with this society, took place on the foregoing dates at the Sophia Gardens, Cardiff, kindly lent for the occasion by the president, the Marquis of Bute. Owing to the heavy rains experienced in the district for the past week or ten days, the entries in the cut flower classes were not so numerous as on former occasions. With this exception, however, this year's show was well up to the average, and the quality of the exhibits, on the whole, was satisfactory.

Open Classes.

For a group of miscellaneous plants in and out of bloom, arranged for effect in a space of 150 square feet, Lady Hill, Llandaff (gr. Mr. MacIntyre), took first place. The centre consisted of a pillar of flowering plants, crowned by a large Kentia, while the corners were formed by single specimens of Humea. Well-coloured Codiaeums, Lilium lanceolatum, and various greenhouse flowering plants were prominent features of this group. Messrs. Cypher, of Cheltenham, were placed 2nd with a very choice collection of plants, consisting of brightly coloured Crotons, Palms, Laelias, Cattleyas, Cypripediums, Miltonias, and a number of Ixoras. This is the first time for many years that this firm has not secured the leading place for groups. H. Cornelius, Esq., Weston-super-Mare (gr. Mr. C. Cook) was third in this class.

For a collection of Roses set out in a space measuring 9ft. by 4ft. 6in., the height not to exceed 6ft., arranged with Rose foliage only, Messrs. S. Treseder and Son, Pwll Coch, Cardiff, were 1st with an admirable collection of distinct varieties. Among some of the best that we noticed were Madame Abel Chatenay, Mrs. Stephen Treseder, the Lyon Rose, and Nita Weldon. Among copper varieties the best were the Marquise de Sinety, Mrs. Aaron Ward, Lady Hillingdon, Arthur Goodwin, Harry Kirk and Mrs. Peter Blair. Messrs. Jefferies and Son, Cirencester, were 2nd in this class, and showed many of the same Roses as named in the 1st prize collection. The 3rd place was taken by Messrs. W. Treseder, Ltd., Cardiff. For a collection of twelve distinct varieties of Roses, three blooms of each, Mr. John Mattock, of Oxford, carried off the 1st prize. Some of the best blooms shown were George Dickson, Earl of Gosford, Her Majesty, Lyon Rose, Mrs. George Sawyer, and Dr. O. Brown. Mr. H. Drew, of Longworth, proved a good 2nd, two outstanding varieties in his exhibit being King George V. and Mrs. Cornwallis West. Messrs. Stephen Treseder and Son were awarded the 1st prize for a collection of 24 blooms of distinct varieties. George Dickson, Earl of Duffryn, and Bessie Brown were among some of the best coloured blooms exhibited. Messrs. Jefferies and Son, Cirencester, were 2nd. For eighteen blooms of Roses, Tea or Noisettes, Mr. John Mattock won the 1st prize. Maréchal Niel, Nita Weldon, Madame Hoste, and Miss A. de Rothschild were prominent in this collection. Messrs. Jefferies and Son were also 2nd in this class. With a stand of twelve blooms of Tea or Noisette Roses, Mr. John Mattock was successful in carrying off the 1st prize, the variety shown being George Dickson. Messrs. S. Treseder and Son were a very good second with a fine box of the Lyon Rose. Messrs. Jefferies and Son showed a good box of Bessie Brown, for which they secured 3rd place. Mr. Mattock was again successful in taking the 1st prize for any one variety of Tea or Noisette Rose, the variety shown being Mrs. Foley Hobbs. A very fine stand of border Carnations and Picotees, tastefully arranged with their own foliage, was staged by Mr. C. Wall, of Bath. Some of the best varieties exhibited were Hercules, Pathfinder, Cecilia, Mr. Griffith Jones, and Roney Buchanan. Unfortunately, Mr. Wall's exhibit was the only one in this class. He was also the only competitor for a collection of Tree, American or "Malmaison" Carnations, arranged in a space 6ft. by 4ft. Some of the outstanding varieties in this collection were : White Wonder, Mandarin, Geisha, and Lady Audley Nield.

The flowers of hardy herbaceous plants were a feature of the show. For a collection of hardy flowers, of distinct varieties, arranged in a space 20 feet by 6 feet, all grown in the open, Messrs. Rich and Co., of Bath, took the 1st prize. Two of the most telling plants shown in this group were Gaillardias The King and Lady Rolleston. Thalictrum dipterocarpum was shown in great perfection in this exhibit. Messrs. W. and C. Bull, of Frome, were placed 2nd, the most noticeable flowers in their group being Gladiolus Hally. W. Treseder, Ltd., Cardiff, although 3rd, showed an excellent collection.

Sweet Peas were exceedingly disappointing, as nothing of any great merit was shown, a common experience all over the country. For a collection of 18 vases of Sweet Peas, of distinct varieties, Capt. Geoffrey Lubbock, of Warminster (gr. Mr. J. W. Law) secured the 1st prize. There was only one other exhibitor in this class. The best varieties noted were Dobbie's Cream, Barbara, Nubian, Lavender G. Herbert, Margaret Atlee. The other entry was so poor that no 2nd prize was awarded.

Fruit and vegetables were remarkably fine, and the competitions on the whole quite satisfactory. For two bunches of White Muscat Grapes E. H. Ebsworth, Esq., Cowbridge, was placed 1st with Muscat of Alexandria. 2nd, Capt. W. B. Marling, of Lydney (gr. Mr. W. Cooper), whose bunches were better coloured than those that gained the 1st prize, but the berries and the bunches themselves were not so large. For any other White Grapes W. Ebsworth, Esq., was again successful in winning the 1st prize, Buckland's Sweetwater being the variety shown. Sir W. Howell Davies, M.P., Bristol (gr. Mr. J. Curtis) was awarded the 2nd prize. The latter competitor was awarded the 1st prize for Black Hamburgh Grapes. The bunches shown were well coloured and of a good size. Capt. W. B. Marling showed the same variety, and was placed 2nd. For a collection of vegetables, 9 distinct kinds, arranged in a space 5 feet by 4 feet, the Marquis of Northampton, Castle Ashby (gr. Mr. A. Searle), was awarded the 1st prize. The collection consisted of clean, well-grown Onions, Celery, Beans, Carrots, Peas, Potatos and Beets. Mrs. Gordon Cumming, Maisemore (gr. Mr. G. Prentice), took 2nd place with vegetables but little inferior to those in the best collection.

Amateurs' Classes.

Numbers of amateurs competed in the open classes as well as in those reserved for themselves. The principal Rose prizes in this section were taken by Mrs. Jenner, Wenvoe Castle (gr. Mr. Wheeler), while in the vegetable classes she was successful in carrying off no fewer than four first prizes. The Onions exhibited by this lady were among the finest in the show. Alan Gibbs, Esq., of Dinas Powis (gr. Mr. W. E. Lambert), carried off the 1st prize for a collection of 6 vases of Sweet Peas of distinct varieties. R. Felton, Scarlet Emperor and Birdbrook were some of the best varieties staged. Capt. Geoffrey Lubbock was placed 2nd in this competition. J. Llewellyn Morgan, Esq., Llandaff (gr. Mr. S. Wall), was placed 1st for a group of miscellaneous plants arranged in a space of 50 square feet. This was a tastefully set up group, in the form of a semicircle. Schizanthus, Eulalias, Francoas and Verbenas were used with excellent effect.

In the class for 12 bunches of herbaceous flowers, distinct kinds, Mr. R. T. Went, Whitchurch, put up an excellent group, Gladiolus America being the most striking plant in it. The 2nd prize was won by an amateur, who does his own gardening, Mr. Mellins, of Penylan.

Trade Exhibits.

A most interesting feature of the Cardiff Show was the large number of exhibits staged by nurserymen. The following firms were awarded Gold Medals:—King's Acre Nursery Co., Hereford, for collection of fruit trees in pots; Messrs. A. A. Walters, Bath, herbaceous plants; Messrs. Jarman and Co., Chard, Roses; Messrs. H. and W. Evans, Llanishen, herbaceous plants; Mr. Rowland Hill, Mendips, near Bristol, rock plants; Messrs. Webb and Sons, Stourbridge, an exhibit of fruit and flowers; Messrs. Dicksons, Chester, herbaceous plants; James Carter and Co., Raynes Park vegetables and Arum Mrs. Roosevelt.

A Silver Medal was awarded to Messrs. Wheeler and Son, Gloucester, for a collection of herbaceous plants; and a Bronze Medal to Messrs. Bowells for a small rock-garden.

The Earl of Plymouth and the Marquis of Bute contributed a forestry exhibit, which proved of great interest.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

July 13.—The monthly meeting of this society was held in the R.H.S. Hall on Monday, the 13th inst., Mr. Arthur Bedford in the chair. Ten new members were elected; five members withdrew double the amount of interest, amounting to £15 3s. 10d.; two members over the age of 70 years withdrew from their deposit £43 13s. 3d. and £2 respectively. The sick pay on the ordinary side amounted to £50 15s., and the chronic sick quarterly payments to £20 3s. The State Section sick pay amounted to £26 4s. 4d., and maternity claims £13 10s. The secretary and treasurer reported on the Conference they had attended on deposit contributors, stating that gardeners should join an approved society to avoid being allocated to any society that might be formed. Important discussion took place on the alteration of rules, but it was felt that the time was inopportune, and the matter would be held over until after the first valuation, 1915.

NORTH OF ENGLAND HORTICULTURAL.

July 18.—In glorious weather and in an ideal situation the summer show of the North of England Horticultural Society took place on the 18th inst. at Roundhay, Leeds, in conjunction with the Roundhay and District Horticultural Society, which is affiliated to the larger society. The exhibits were of an exceptionally high standard.

Messrs. Dobbie and Co., Edinburgh, exhibited Sweet Peas, for which a Gold Medal was awarded. The varieties Thomas Stevenson, Queen of Norway, Hercules, King White, Mrs. C. W. Breadmore, and Melba were all exceptionally good.

Messrs. W. and J. Brown, Peterborough, exhibited Roses of high merit. Pyramids were constructed of Lyon, Mrs. Wakefield, Christy Miller, Marquise de Sinety, Rayon d'Or, Joseph Hill, Juliet, and Lady Pirrie. (Gold Medal.)

Messrs. John Peed and Son, London, showed a large exhibit of Caladiums. The colouring was good in every case, and the best varieties were Miss Rose, Princess Olga, Argentine (very fine), Fastuosum and Oriflamme. (Gold Medal.)

Mr. Walter Allsop, Leeds, showed Roses in baskets, bouquets, stands, and vases. (Large gold Medal.)

Mr. Wm. Lawrenson, Yarm-on-Tees, had a small but choice exhibit of Carnations. Snowdrift still retains the high promise it gave when first exhibited at the N.E.H. In this group were also Congress, Mrs. W. B. Clode, Mrs. Burnet, Rose Doré, Cecilia and Mrs. A. F. Dutton. (Large Silver Medal.)

Messrs. Ker and Sons, Liverpool, showed greenhouse and stove plants, for which they were awarded a Silver Medal.

Messrs. G. Gibson and Co., Bedale, exhibited hardy flowers. Choice named varieties of Delphiniums were noted, also large masses of Oriental Poppies, Gaillardias, Spiraeas, and Verbascums. (Silver-gilt Medal.)

Messrs. Sam Dean and Son, Bradford, showed Violas. (Silver Medal.)

Messrs. F. C. Edwards and Son, Leeds, had three small groups of greenhouse plants, made up of Carnations, Hydrangea paniculata, and Ferns. (Silver Medal.)

Messrs. James Firth and Son, East Keswick, showed a new scarlet bedding Pelargonium named Rising Sun. (Large Bronze Medal.)

Mr. G. W. Miller, Wisbech, for a display of herbaceous flowers was awarded a Silver-gilt Medal.

Messrs. Artindale and Son, Sheffield, exhibited a collection of Violas. (Silver-gilt Medal.)

The Rev. C. Gallacher, Hunslet, near Leeds, showed a large bank of Gloxinias, both as pot plants and blooms. (Large Silver Medal.)

In the Roundhay and District Horticultural Society's classes Mr. Henry Drew, Faringdon, Berkshire, won the 1st prize for 24 Roses, distinct; 2nd, Messrs. Harkness and Co., Hitchin, who were placed 1st for 12 blooms of Teas and Hybrid Teas, in which class Mr. Drew was 2nd. Mr. Drew showed the best 12 blooms in four varieties and the best 12 vases, distinct, three blooms in each vase. Other prominent exhibitors of Roses were Messrs. W. and J. Brown, Peterborough, and Messrs. G. and W. Burch, Peterborough. In the Sweet Pea classes Mr. C. E. Taylor, Carnforth, was the most successful exhibitor. An interesting class was that for a display of summer bedding arranged in a space 7 feet by 5 feet, in which Mr. Allsop, Leeds, was adjudged the winner.

GARDENING APPOINTMENTS.

[Correspondents are requested to **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.]*

Mr. Jas. McGarra, for the past 19 months Foreman at Naemoor Gardens, by Stirling, as Gardener to F. Riddle Blunt, Esq., Cheeseburn Grange, Newcastle-on-Tyne

Mr. James Crane, for the past three years Gardener at Clare House, West Malling, Kent, as Gardener to A. Barratt Esq., Totteridge Park, Hertfordshire.

Mr. A. Backshall, for the past 6½ years Gardener to L. McKenna, Esq., Honeys, Twyford, Berkshire, as Gardener to Hon. Mrs. Pleydell Bouverie, Coleshill House, Highworth, Wiltshire. [Thanks for 1s. for R.G.O.F. box.—Eds.]

Mr. Arthur Shipway, for nine years Gardener to Ricardo Palmer, Esq., as Gardener and Estate Manager to E. D. Kenna, Esq., The Rocks, Eridge, near Tunbridge Wells.

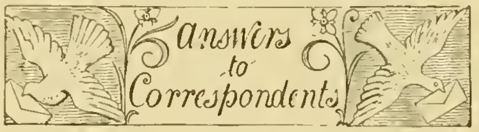
Mr. P. Evans, for two years Gardener at Templemere, Weybridge, as Gardener to Colonel D. F. Lewis, C.B., Park Hall, Evesham.

Mr H G. Shaw, for 4½ years Gardener to the late William Smith, Esq., Newsham House, Broughton, Preston, Lancashire, and for the past 10 months Gardener to A. Bradbury, Esq., Berthlwyd, Conway, North Wales, as Gardener to the same gentleman at Bryn-Lupus, Llanrhos, Llandudno. [Thanks for 2s. for R.G.O.F. box.—Eds.]

Mr. J. H. Oliver, for the past 2 years General Foreman to the Bournville Village Trust, as Gardener to Henry Lloyd Wilson, Esq., Selly Wood, Selly Oak, Birmingham.

ENQUIRY.

Fuchsia excorticata.—Has any reader in his collection a plant of Fuchsia excorticata? I am anxious to obtain seeds of it in exchange for others. *M. Buysman, Jardin Botanique, Lawang, Java.*



Answers to Correspondents

Banana: *G. W. B.* Allow the suckers to remain for a little longer before detaching them. Much depends upon how they are placed as to when they are best detached, but to remove them all now would do more harm than good; moreover, at this stage it would be a difficult matter to remove all the suckers without injuring the surface roots. The work may be done when the bunch of fruits is fully developed. If the suckers are some distance from the main stem one or two of the largest may be removed carefully now, and one or two more in a few weeks' time. Give the plants a rich surface dressing and water the roots copiously. The parent plant should be encouraged to form roots near to the surface.

Club-Root of Cauliflower: *F. D. and Co.* Your Cauliflowers are affected with club-root, caused by a slime-fungus known as Plasmodiophora brassicae. Plants are most susceptible to the disease during the first three weeks after germination, so that if the seed-bed contains the least trace of the infecting organism, the seedlings are likely to be attacked. The best way of eradicating the disease will be to treat the soil with quick-lime; thirty-five bushels of lime per acre is sufficient to arrest it.

Gardener's Legacy: *R.* Although a head gardener is a "domestic servant," so far as the question of notice of dismissal is concerned, different rules apply when considering the question of legacies to domestic servants. Most of the decided cases turn upon the precise nature of the wording of the employer's will, and you had better consult a solicitor.

Insects Infesting Scrophularia: *Correspondent.* The slug-like creatures are the larvae and the small spheroidal objects, the cocoons of a curious and interesting weevil, Cionus scrophulariae. This beetle is not uncommon, but it is somewhat local in its distribution. So far as we know, it confines its attack to Scrophularia.

Japanese Lilies: *D. B. A., Teddington.* The Japanese Lilies are mainly propagated from the small bulbils that develop on the stems and cluster around the bulbs. The scales are used to a very small extent only and the seeds not at all, except occasionally in the case of L. speciosum. The bulbs are best lifted annually to allow them full room when replanting for development. But in this country, L. longiflorum is, of course, useless in the second season, and the other species must be left undisturbed. No special precautions are taken to protect the plants from sun and frost. Good flowering bulbs are developed in three years. About 13 inches in circumference is the size of a first-quality bulb, but a small, heavy bulb with only one crown will give a much better spike than a larger, looser bulb which has two or three crowns. The bulbs are not placed in cold storage during their journey from Japan; they are packed tightly in clay, and as they travel in mid-winter they arrive in fine condition, as a rule, although storing them too near to ships' boilers sometimes causes overheating and growth in the case. We know of no book dealing with this aspect of Lily cultivation.

Lavender for Profit: *G. C.* Lavender could very well be grown in the conditions mentioned in your letter, and the bushes would be effective all the year round, but we would not encourage you to expect to make much profit from the bushes. Practically all the Lavender for perfumery is grown by a few persons who are able to cut the flowers in large quantities, and the distillers rarely care to purchase in smaller quantities from unknown sources. The value of Lavender to the manufacturer of perfumes depends entirely on the unit of essential oil which it contains, and this varies considerably; generally the poorer the soil the greater the unit of oil, so that as the orchard trees would receive manure the Lavender you propose to plant between the rows would not be very rich in essential oil, although the flower-spikes would be of good size. In the circumstances we think your best plan would be to endeavour to sell the Lavender as cut flowers locally, or if the quantity is sufficient send them to one of the large markets. In most towns there is a ready sale for bunches of this fragrant herb.

Names of Plants: *J. W.* Rose Mrs. F. W. Flight.—*J. C.* Sequoia sempervirens (Redwood).—*Fell.* The specimen with wide leaves with a silvery under-surface is Pyrus rotundifolia. The other is the Cut-leaved Beech, Fagus sylvatica var. heterophylla.—*S. F. W.* Bulbophyllum macranthum, similar in growth to B. patens but the form of the labellum is distinct. Both are evergreen species requiring warm-house treatment.—*G. K.* Aërides multiflorum, of which A. affine, A. roseum, A. Lobbii and others of gardens are forms.—*J. S.* 1, Pteris longifolia; 2, Adiantum tenerum; 3, Pteris tremula; 4, Lastrea varia.

Nectarine Fruits: *H. W.* There is no fungus present on the Nectarines received. The appearance of scab and rust on the fruits is due to some other circumstance.

Onion Maggot: *M. S.* The best time to take precautions against the Onion Fly is April and May, when the fly hatches out. It lays its eggs in the neck of the Onion seedling, and the maggots hatch out in 5-7 days. The young seedlings should be sprayed with paraffin emulsion, made as follows:—Mix 3 pints of paraffin and ½ lb. of soft soap into a gallon of boiling water. Stir thoroughly, and dilute with six to eight gallons of water. If the plants are very young, use the weaker solution; and in any case the spray should be used two or three times. Where seed is sown in drills the egg laying may be prevented by earthing up the young seedlings to above the neck of the bulb. All attacked plants should be removed with the surrounding soil and burnt; and Onions should not be grown on the same soil for at least one season. Plants sown broadcast can be sprinkled with soot. Seeds should be sown early, or planted in boxes, and the seedlings afterwards planted out, so that the plants may have made good progress before the fly hatches out.

Rose Leaves Injured: *D. G. B.* The leaves show unmistakable signs of having been injured by the larvae of a species of sawfly, but no examples of the pest were present in the consignment submitted for examination. The probabilities are that all the larvae have pupated, and if so you will see nothing more of them this season.—*T. W. B.* The leaves of your Rose bushes have been injured by the slug-worm. Thoroughly spray the trees with Hellebore wash.—*Highbury.* There is no fungus present upon the leaves which you have submitted for examination, but they are infested with the larvae of one of the sawflies peculiar to the cultivated Rose. Large numbers of the pest may be collected by jarring or tapping the branches over an inverted umbrella. Spraying with Paris Green at the rate of 2 ounces to 20 gallons of water may prove beneficial; try it on one or two of the infested plants and watch the result.

Roses Planted Out Under Glass: *Inquisitor.* The varieties you name are free bloomers, and we see no reason why they should not flower during September, October, and November. Afford the plants a rest from the present time until the middle of August. Remove all flower-buds, and keep the roots on the dry side. By the dates named cut back the growths to a plump eye, and spread out the shoots as much as you can. Fork up the surface soil, water it freely, and keep it always fairly moist. In dry weather the plants should be syringed both morning and evening. By the end of September the top lights should be replaced, but admit plenty of ventilation both night and day throughout October unless frosts occur. By that date it may be advisable to utilise the hot-water system at night, but do not allow the temperature to rise above 50° at night, and 50° to 56° by day. A spraying with a weak fungicide now and then to ward off mildew will be a wise precaution. Roses of the Tea and Hybrid Tea groups, especially those with not too full flowers, may be induced to bloom under this treatment up to Christmas.

Rust on Cherries: *G. W. B.* The best cure for the rust, which is caused by a fungus, is sulphur applied late in the day, and to be effective it must be applied before the pest spreads much.

Stocks Dying: *E. P.* The roots of the stocks have been killed by the fungus Botrytis sp. The soil is infected with it, and should be treated with quicklime. A little kainit should be sprinkled on the soil a week before sowing seeds, and watered in with a fine-rose can.

Sugar Pea: *A. G.* The Sugar Pea requires precisely the same culture as ordinary garden Peas. The seed should be sown early in the season; probably the best results are obtained by sowing the seed thinly in boxes about the middle of March and planting the seedlings in well-prepared ground after the plants are hardened thoroughly. The pods should be gathered and cooked whole, or sliced like French Beans, whilst quite young and tender.

Sweet Peas: *H. M.* The following varieties are suitable either for exhibition or for ordinary decorative purposes in the home or garden:—R. F. Felton, Rosabelle, Hercules, Thomas Stevenson, New Marquis, Margaret Atlee, Elfrida Pearson, Princess Mary, Illuminator, Marks Tey, King Alfred, and Mrs. C. W. Breadmore. It is much more difficult to name 6 Roses that are equally suitable for exhibition and ordinary garden decoration, as the best exhibition varieties are in many instances not so floriferous as the best garden varieties. However, the following six should prove serviceable:—Frau Karl Druschki, Hugh Dickson, Caroline Testout, Madame Mélanie Soupert, Ophelia, and Lady Hillingdon. Six good Narcissi for forcing are Golden Spur, Emperor, Victoria, Barrii conspicua, Mrs. Langtry, and Sir Watkin. These force well, and are amongst the best, taking into consideration the price. Two excellent Tulips are Prince of Austria and Yellow Prince. If you prefer pink to yellow, then substitute Rose Gris de Lin, but take care to include the first-named, for it has sterling qualities.

Sweet Peas Unhealthy: *C. H. Hough.* We can find no disease to account for the plants not developing properly; wrong cultural conditions are probably the cause of the trouble. A lump of pure peat was adhering to the roots, and there were no signs of root nodules. Probably the soil to start with had insufficient lime, and to judge from the size of the plants they have been growing in rather dry conditions. Deep cultivation migbt help.—*C. Kimberley.* One of the plants with large leaves enclosed is attacked by Bacillus Lathyri, the organism regarded by some as the cause of "Sweet Pea streak" (see *Gardeners' Chronicle*, April 5, 1913, p. 215). The plants look as if they had been rather overmanured. The vascular system is discoloured, more especially so at the collar—this may account for the cockling of the leaves. A fungus Thielavia basicola was present in the roots, but the injury due to this fungus only extended to the depth of several cells below the epidermis. The second plant has a slight attack of Bacillus Lathyri, but not sufficient to account for the general yellowing of the plant. The vascular system is also affected.

Tomato Growing for Profit: *Peldon.* We presume you mean Tomato growing under glass. Ten pounds (£10) per acre is a big rent to pay for land, even in the district you mention. We do not expect that you intend to erect glasshouses on rented land! Much better to purchase one or more acres of land near a main road (on account of the cost incurred in carting to the nursery coal, manure, etc.), and within easy reach of a railway station and large towns. With from 8 to 10 glasshouses from 100 to 150 feet in length and 15 feet wide, with a good practical man to take the lead, your helping him and making mental notes of every cultural detail and items of expense incurred in the business, you should make a good living.

Trees and Shrubs for Natal: *J. Cockburn.* It is likely that the various plants mentioned will thrive in Natal at an elevation of 2,000 feet above sea level, provided the soil is good and moderately moist, and that water can be provided during periods of drought. Should the soil contain much lime the Rhododendrons and Abies would, however, be unlikely to thrive, whilst certain kinds of Cupressus would also prove a failure. The other plants do not object to lime. It is probable that these and numerous other decorative trees and shrubs have been already tried, and if such is the case the Curator of the Botanical Garden, Pietermaritzburg, would be able to furnish you with a list of the most desirable subjects to plant.

Vines: *Sefton Place.* A careful examination of your specimens failed to discover any fungus disease. The failure is due to some error in the cultural conditions.

Vines Failing: *J. M.* We have made a thorough examination of the specimens sent but can find no trace of either fungus or eelworm. The injury must be due to some defect at the roots, which could only be determined on the spot.—*T. W. B.* The vines are suffering from a lack of iron in the soil. You should sprinkle a few crystals of sulphate of iron over the border at intervals.

Weed Killer: *South of France.* Add 1lb. of powdered arsenic to three gallons of cold water, boil and keep stirring. Add seven gallons of cold water and 2lbs. of crushed soda, and stir while boiling. Apply the weed-killer with a rose watering-pot in dry weather at the rate of 1 gallon to 1½ square yards.

Communications Received.—Charles J. White (thanks for 1s. for R.G.O.F. box)—C. Hodgson—Avos—A. M. Ludlow—E. Field—S. W.—H. P. Southover—Subscriber—Bulletin—E. M.—E. S.—T. W.—Fell—T. W. C.—A. S.—Mrs. F.—C. S.—Peldon—W. C. A.—Amateur—W. R.—Wideawake—High—Interested—W. A. T. (Hove)—W. E. P.—E. P.—B. (Wilts)—H. V.—R. A. M.—N. P.—F. A. E.—E. P. P.—A. E. H.—J. S.—H. W. Ward—W. C. A.—P. Blair—R. V. J.—H. G. S.—F. Clarke—A. Ireland—S. Castle—W. Kelly—W. H. W.—D. B.—Hart—A. Heinrich—E. H.—S. A.—Chloris—M. Buysman.

THE
Gardeners' Chronicle
No. 1,440.—SATURDAY, AUGUST 1, 1914.

CONTENTS.

Apple Peacemaker .. 95
Austrian expedition to China, an 96
Banksian Rose, a large 95
Begonias, winter-flowering 93
Canker in Apple caused by brown rot 85
Colman, Sir Jeremiah, public gift by .. 95
Cyaniding of greenhouses 86
Dragon Fly, the .. 97
Drucry, Mr. C. T. .. 95
Entomologist, appointment of, by R.H.S. .. 95
Fruit crops, reports on the conditions of the 87, 94
Fruit packing, awards for 98
Germination of seeds in the fruit 98
Hops, fruit and Potatos in the United States 95
Holidays for poor children 98
London Gardens Guild 98
Markham, Mr. H. .. 95
Market fruit-garden, the 86
Moon, influence of the, on growth 86
Narcissus fly, the lesser 95
Nursery, visit to a .. 95
Obituary—
Bradbury, Joseph .. 104
Orchid notes and gleanings 86
Protection against plant pests 94
Societies—
Birmingham and Midland Union of Hort. 95
British Gardeners' Association.. .. 102
Cardiff Hort. 101
Cemetery Superintendents' Assoc. .. 102
Formby Hort. .. 102
Leamington and County Hort. .. 103
National Gladiolus .. 101
Royal Hort. 98
Southampton Royal Hort... 101
Watford Hort. .. 101
Woolton Hort. .. 101
Texas, proposed botanic garden for 86
Week's work, the—
Flower garden, the .. 96
Fruits under glass .. 97
Hardy fruit garden, the 97
Kitchen garden, the .. 97
Orchid houses, the .. 96
Plants under glass .. 96
Whiteley Park, ceremony at 95

ILLUSTRATIONS.

Canker in Apples caused by brown rot 85, 86
Dragon Fly, the 98
Oncidium Leopoldianum 99
Oncidium corynephorum 100
Apple Peacemaker. (Coloured Plate.)

THE "BROWN ROT" CANKER OF THE APPLE.

IN May, 1910, I drew attention in this journal to the fact that the fungus Sclerotinia fructigena (Monilia fructigena), which causes the disease known as "brown rot" affecting the flowers and fruit of Plums, Cherries, Apples, Pears, Medlars and Peaches, is sometimes the cause of a definite "canker" in the branches of the Apple. Investigation showed that this "canker" injury may arise in one of two ways. Sometimes the young Apples of the tree are attacked by the brown rot fungus, with the result that the flesh of the Apple becomes permeated by the spawn (mycelium), while pustules of spores (conidia) are produced on the outside. Many of these diseased and half-rotten Apples fall to the ground, but it is not uncommon to find some of them remaining on the tree, firmly attached to the spur or branch, throughout the winter right on to the following spring. The Apples which remain on the tree in this way are in a dried-up, mummified condition; the spawn of the fungus, however, remains alive, and, under suitable weather conditions, renews its growth in the following year, and produces pustules of conidia. In some cases the diseased Apples, rotting under the attack of the fungus, press against the part of the branch near the spur on which they are borne, and remain fixed for months in this position, the decaying flesh of the Apple at first softening and then hardening, and, as it were, glueing the Apple firmly to the branch. Under such conditions the spawn of the fungus grows from the diseased Apple into the branch, and produces there a local canker-like injury. In the following spring, or even during the winter if it is a mild season, pustules of conidia are developed over the cankered area, breaking out through cracks in the bark from the underlying mycelium. Sometimes the branch becomes completely girdled at the canker, when, of course, the upper part dies; this, however, rarely occurs in the case of large branches, but is frequent with the smaller twigs.

The second way in which the brown rot canker may arise on a branch is by the mycelium of the fungus directly travelling into the wood from the fruit-spur, which has become infected from its flowers or fruit. The spur is killed, the mycelium travels from its base into the branch and forms there a canker, from which the dead spur projects as a snag. In such cases the dead remains of the spur almost invariably bear numerous pustules of spores.

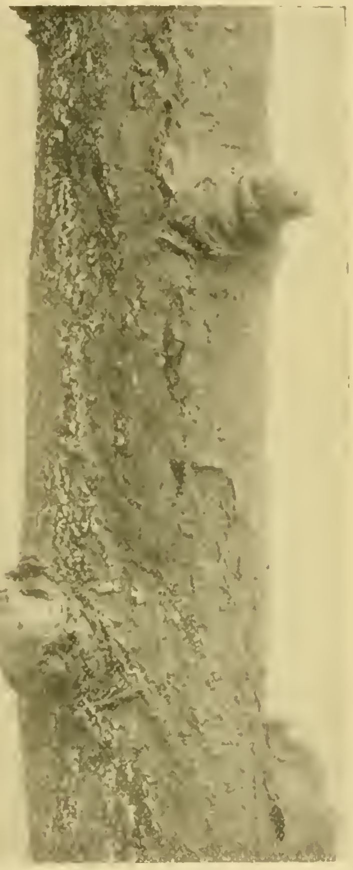


Fig. 37.—Portion of a branch of "James Grieve" Apple, showing large "brown rot" canker, with pustules of spores in the cracks of the canker. Also dead fruit-spurs through which the fungus entered the branch.

During the past autumn and spring outbreaks of brown rot on Apples have occurred to an unusual extent. In very many cases the attack has resulted in the formation of cankers in the branches. As previously noted, the attack on the wood proceeds sometimes *viâ* the fruit, and sometimes, and perhaps more frequently, from the blossoms. Typical cases of the first method of attack were seen last autumn in several plantations near Maidstone. The variety was James Grieve. A considerable number of the Apples (which are soft-fleshed in this variety) were attacked just before ripening, and the mycelium of the fungus invaded the cortical tissue of the spurs bearing such Apples, and eventually entered the branch, soon producing in the part surrounding the spur a cankered area, where the bark cracked. In the cracks of the bark all over the canker, pustules of spores were produced in abundance during the winter and spring. In some cases, where a number of contiguous spurs was attacked, the canker resulting was as much as 1 foot in length. Such a canker is shown in fig. 37, in which several dead spurs, where the fungus obtained an entrance, can be seen projecting.

More frequently, however, in the cases which have recently come under observation, the disease has commenced by the fungus attacking the tree when in flower. A number—often a very large number—of flower-spurs are attacked, and then the fungus in the course of a few weeks enters the branch through the dead or dying spur. This kind of attack has taken place on a large scale in plantations of Cox's Orange Pippin and Lord Derby. The photographs (figs. 38 and 39) are of a branch of a tree of Cox's Orange Pippin on which dozens of flower-spurs were attacked and killed; round the base of these spurs cankers arose, in the cracks of which pustules of Monilia spores were freely produced in June. As these photographs (taken from opposite sides of the branch) show, the canker has completely girdled the branch.

I am informed by Professor H. H. Whetzel, Professor of Plant Pathology in Cornell University, U.S.A.—to whom I recently showed some affected trees—that except for the occurrence of pustules of spores in the cracks, these injuries produced in the Apple branch by the brown rot fungus, when it enters by the flower-spur as described above, are exactly similar to that caused by "fire blight" (Bacillus amylovorus), an extremely destructive disease from which this country is at present fortunately free.

The varieties on which I have observed the brown rot canker are as follows:—Cox's Orange Pippin, Lord Derby and James Grieve (all severely attacked); Worcester Pearmain, Ecklinville Seedling, Beauty of Bath, Ribston Pippin and Warner's King (less severely attacked).

With regard to remedies, where trees have been noticed to be affected in the previous season, all dead wood and cankers should be cut out and the trees well sprayed with Bordeaux mixture (4 lb. quicklime, 4 lb. copper sulphate, 50 gallons water) immediately before the flower-buds open. Where the disease has been bad a second spraying should be given directly the bloom is set, using either Bordeaux mixture or the lime-sulphur wash, according to the variety of Apple (the latter spray for Cox's Orange Pippin). Where flower-spurs are observed to be attacked in the spring I would strongly advise growers to cut them off immediately and burn them, as this measure, carried out in time, removes the disease before the fungus has time to grow into the branch. Besides the actual damage to the branches caused by the formation of cankers, the cankered areas and the dead spurs projecting from them must be regarded as highly dangerous to the health not only of Apple trees, but of surrounding fruit trees, such as Plums and Cherries, since pustules of spores are produced on them practically all the year round. *E. S. Salmon, Mycologist to the South-Eastern Agricultural College, Wye, Kent.*

ORCHID NOTES AND GLEANINGS.

ODONTONIA CLEVERLEYANA.

Messrs. Mansell and Hatcher showed this fine Odontonia at Holland House on June 30, when it secured a First-Class Certificate, not an Award of Merit, as stated in the line beneath the illustration printed in these pages on July 11.

SEED-RAISING HOUSE AT BRACKENHURST.

In the fine block of Orchid-houses lately erected for Mr. J. Gurney Fowler at Brackenhurst, Tunbridge Wells, especial care and attention is devoted to the accommodation of seedlings. The houses set apart for this purpose were erected under the personal supervision of Mr. T. Armstrong, of the firm of Messrs. Armstrong and Brown, and the skilful construction facilitates greatly the difficult work of raising hybrid seedlings. The greater part of the range is occupied with choice, warm-house Cypripediums, about a third of the space being partitioned off at the further end for seeds and very young plants. In this compartment a high temperature is maintained, and in order to provide sufficient moisture without the attendant disadvantage of excessive condensation, the following plan has been followed. Six rows of 4-inch hot-water piping extend up each side; and the end cross-staging is provided with a hot-water tank, over which the seed-raising case is constructed. This case is fitted with glass sash-lights, which are never closed; and the contrivance enables the seedlings, when removed from the case, to enjoy almost the same conditions as before. As the change from the seed-case to the first pot is a frequent cause of mortality in hybrids, the arrangement described is extremely advantageous. The spring sowings at Brackenhurst are now sturdy little plants in store pots, while seeds sown scarcely a month ago have resulted in stout, fleshy, globular seedlings, soon to be placed in store pans. The method of preparing pots for sowing is to make up tufts of peat and Sphagnum-moss, cover them with fine linen, thoroughly soak them in rain water, and place them in the pots a day or two before sowing the seed. It has been found best not to make these wads long beforehand; if they are kept, they are apt to become infected with fungi, which thus have time to assume formidable proportions before the young seedlings are grown. The freshly-sown pots are placed on the top of inverted pots of the same size, and these in turn are placed in pans of water. As the pans stand on the hot-water tank, the water helps to maintain a moist atmosphere, besides acting as a deterrent to insect pests. The close staging over the pipes is covered with shingle and kept wet. The open woodwork on which the plants stand is painted with oxide of iron over white lead. This makes a clean, wholesome surface, and the appearance is also very neat, as the colour almost matches that of the pots. There can be little doubt but that the Brackenhurst method of raising seedlings will prove generally successful, and that the plants thus produced will flower more rapidly than those raised by less scientific methods. Since the chief secret of successful Orchid-raising is to avoid checks to development, any method which eliminates the risk of checks at a critical stage of growth must be good.

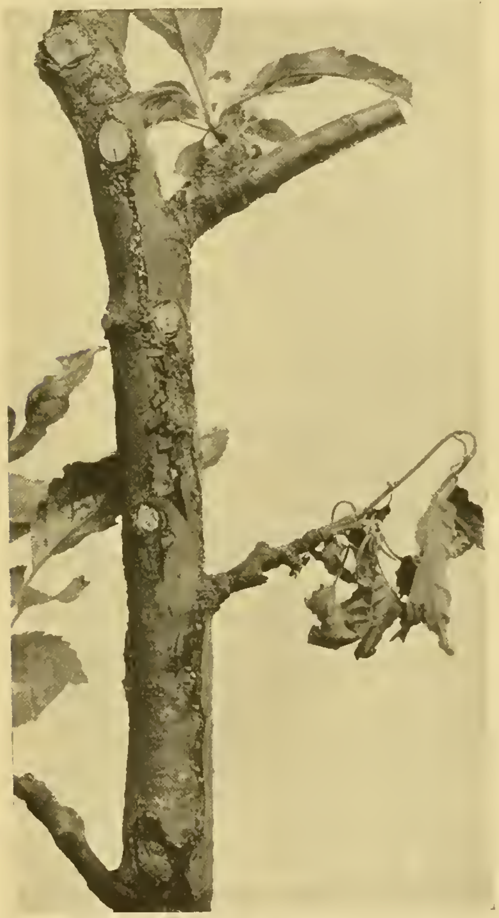


Fig. 38.—Portion of a branch of "Cox's Orange Pippin," showing the "brown rot" canker. The dead spur was attacked when in flower. Pustules of spores can be seen.

SOUTH AFRICA.

INFLUENCE OF THE MOON ON GROWTH.

It may be of interest to your readers to know that it is a fairly common belief amongst the older Boers that the moon has really an effect on the growth of plants. It was first brought to my notice through an old Dutch friend declining to prune some vines, about which he was giving me some information. He said that it would spoil them to prune them when the moon was on the decrease, and seemed quite surprised that I did not hold the same opinion. He went on further to state that seed should not be sown, plants transplanted, trees pruned, nor other gardening operations taken in hand when the moon is on the wane. This must be a belief brought over by the original Dutch colonists, as Mr. Buysman has found the same tradition to exist in Java. At first I was inclined to put it down to the Dutchman's love for procrastination. "To-morrow is another day" is the axiom of too many.

CYANIDING OF GREENHOUSES.

Many of your correspondents appear to have had failures in the use of cyaniding. May it not be due to fumigating in the daylight? Cyanide is constantly used in South Africa for fumigating Citrus trees, but the cyaniding is almost always done at night. Some time back I was shown a tree the top of which was quite dead. It was explained that there had not been time to remove the tent, which was placed over it for purposes of fumigation, before the sun had risen, with the result that the rays had struck the top of the tent, and that portion of the tree across which the light had fallen had withered. *C. N. Knox Davies, Johannesburg.*

Proposed Botanic Garden for Texas.—With a view to conserving the native flora, it is proposed to establish a botanic garden and arboretum at Austin in Texas. The movement is being supported by various horticultural and agricultural societies in the United States, and several associations have appointed committees for the purpose of furthering the proposal.

THE MARKET FRUIT GARDEN.

An Invigorating Fruit Tree Wash.

On page 390 reference was made to numerous insecticide trials, mainly against the Apple sucker. It was stated that a mixture of soft soap and ammonia was one of the most satisfactory of the washes tried, as the addition of ammonia not only strengthened the killing power of the soap, but also seemed to invigorate the foliage. Since that statement was made it has been very strikingly confirmed. A Worcester Pearmain tree, selected as about equal in all respects to a tree above and another below it in its row, was sprayed with 1 fluid ounce of domestic cloudy ammonia and 1 ounce of soft soap to a gallon of water. This slightly scorched the petals of open blossom, and the conclusion was that the proportion of ammonia was too great. But the appearance of the sprayed tree now is strikingly superior to that of the two trees adjoining it. The foliage is larger and of deeper colour, clearly proving that the ammonia has had an invigorating effect, while the fruiting was not impaired by the scorching of the edges of the petals of the blossom. A reduction to $\frac{3}{4}$ fluid ounce of ammonia to a gallon of water, with 1 ounce of soft soap, proved quite harmless to foliage and open blossom in repeated trials. It is a pity that there was no ordinary commercial ammonia at hand for the test. This may be a little stronger than the domestic cloudy ammonia. Next season, however, 7 lbs. of the best soft soap and 3 pints of ordinary fluid ammonia to 100 gallons of water will be tried for aphis and Apple sucker. *Southern Grower.*

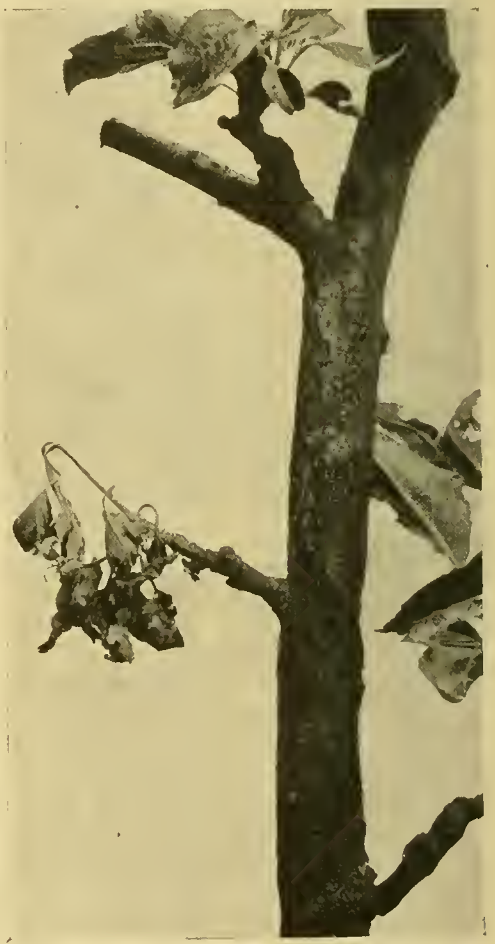


Fig. 39.—The same branch as fig. 38, seen from the other side. It can be seen that the canker is now girdling the branch. The bark is cracking and spores are appearing in the cracks.

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 94.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
0, Scotland, N.										
CAITHNESS	Average; very good	Average; good	......	Average; good	......	......	Over; very good	Average; good	......	W. F. Mackenzie, The Gardens Thurso Castle, Thurso.
ELGIN	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Average; good	Under; good	Under; good	......	John Macpherson, Mayne Gardens, Elgin.
ISLE OF SKYE	Average; good	Average; good	Over; very good	Under; good	Over; very good	......	Over; very good	Average; very good	......	Charles Angus, Armadale Castle Gardens, Isle of Skye.
NAIRNSHIRE	Under	Average; good	Average; good	Under; good	Average; good	Over; very good	Over; very good	Average; good	......	David Chapman, The Gardens, Cawdor Castle, Nairn.
ORKNEY	Average; good	Under	......	Over; good	Average; good	......	Over; good	Over; good	......	W. Liddell, Balfour Castle Gardens, Kirkwall.
1, Scotland, E.										
ABERDEENSHIRE	Average; good	Average; good	Over; good	Average; good	......	......	Over; very good	Average; good	......	James Grant, Rothienorman Gardens.
	Average	Average	Over	Under	......	......	Average	Under	......	Simon Campbell, Fyvie Castle Gardens.
	Over	Average	Over	Over	......	......	Over	Under	......	Wm. Henderson, Meldrum House Gardens.
	Under; good	Average; good	Over; very good	Over; very good	Average; good	Average; good	Over; very good	Under; bad	......	John McKinnon, Haddo House Gardens.
BANFFSHIRE	Under	Under	Under	Under	......	......	Average; good	Under	......	George Edwards, Ballindalloch Castle Gardens.
	Average	Average	Under	Over	Over	Average	Average	Under	......	George H. Ogg, Netherdale House Gardens, Turriff.
BERWICKSHIRE	Average; very good	Average; good	Over; very good	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	......	Peter Smith, Duns Castle Gardens, Duns.
	Average	Average	Over	Over; very good	......	......	Over; very good	Over; very good	......	Robert Stuart, Thirlestane Castle Gardens, Lauder.
	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Average; good	Average; very good	Average; bad	......	Thomas Nelson, Milne Graden Gardens, Coldstream.
	Average; good	Over; very good	Over; very good	Under; good	......	Average; good	Average; good	Average; very good	......	R. Henderson, Ayton Castle Gardens.
CLACKMANNANSHIRE	Average	Average	Over	Average	Under	Average	Over	Average	Under	Alexander Kirk, Consulting Gardener, Alloa.
	Average	Average	Average	Average	......	......	Over	Average	......	James Small, Norwood Gardens, Alloa.
FIFESHIRE	Under	Average	Under	Average; good	......	Average; good	Average; good	Under	......	Chas. Simpson, Wemyss Castle Gardens.
	Under; good	Over; very good	Under	Average; good	Average; good	Average; very good	Over; very good	Average; good	......	D. McLean, Raith Gardens, Kirkcaldy.
	Average	Under	Under	Average	......	Under	Over	Over	......	William Henderson, Balbirnie Gardens, Markinch.
FORFARSHIRE	Average	Average	Ove	Average; very good	......	......	Average; very good	Average; very good	......	William Alison, Seaview Gardens, Monifieth.
	Under	Over; good	Under; good	Over; good	......	Under	Average; good	Average; good	......	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Under	Average; good	Average;	Under	......	......	Under	Average; good	......	Andrew McAudie, Ruthven House Gardens, Meigle.
HADDINGTONSHIRE. (EAST LOTHIAN.)	Over; very good	Average; very good	Average; good	Average	Average; good	Over; very good	Over; very good	Under	......	R. P. Brotherston, Tyninghame Gardens, Prestonkirk.
KINCARDINESHIRE	Average	Over	Average	Over; good	......	......	Over; good	Average; good	......	William Knight, Fasque Gardens, Laurencekirk.
KINROSS-SHIRE	Average	Under	Over	Average	......	......	Over; good	Average	......	Robert Fraser, Kinross House Gardens, Kinross.
MIDLOTHIAN	Over; very good	Over; very good	Over; very good	Over; very good	......	Over; very good	Over; very good	Average; very good	......	Benjamin B. Ness, Oxenfoord Castle Gardens, Ford.
	Average	Average	Under	Under	......	Over; good	Over	Average	......	D. Kidd, Carberry Tower Gardens, Musselburgh.
	Average	Over	Average	Average	Average	Over	Over	Average	......	Wm. G. Pirie, Dalhousie Castle Gardens, Bonnyrigg.
	Average; good	Over; good	Under; good	Average; very good	Average; good	Average; good	Average; good	Under; good	......	James Whytock, Dalkeith Gardens, Dalkeith.
MORAYSHIRE	Under; bad	Over; good	Over; good	Over; good	Average; very good	Over; very good	Average	Under; bad	......	Chas. Webster, Gordon Castle Gardens, Fochabers.
PEEBLESSHIRE	Over; very good	Over	Over; good	Over	......	......	Over; very good	Over; very good	......	Wm. McDonald, Cardrona, Innerleithen.
	Average; good	......	Over; very good	Over; very good	......	......	Over; very good	Over; very good	......	Alex. J. McDonald, Darnhall Gardens, Eddleston.
PERTHSHIRE	Under; good	Under; good	Over; very good	Average; good	......	......	Over; very good	Under; bad	......	Thomas Lunt, Keir Gardens, Dunblane.
	Average	Under	Average	Average	......	......	Average	Average	......	John Robb, Milnab Terrace, Crieff.
ROXBURGHSHIRE	Under	Over; very good	Average	Over; very good	Average	Under	Over; good	Average	......	W. Chaplin, Springwood Park Gardens, Kelso.
SELKIRKSHIRE	Over; very good	......	Over; very good	Over; very good	......	......	Over; very good	Over; very good	......	John C. Lunt, Bowhill Gardens, Selkirk.
6, Scotland, W.										
ARGYLLSHIRE	Under; good	Under; good	Average; good	Average; good	Under	......	Average; very good	Average; good	......	D. S. Melville, Poltalloch Gardens, Lochgilphead.
	Average; good	Average	Average	Average	......	......	Over	Over	Average	Henry Scott, Torloisk Gardens, Aros.
AYRSHIRE	Average; good	Under	Over	Average	......	......	Average; good	Over; good	......	William Priest, Eglinton Gardens, Kilwinning.
	Over; good	Average; good	Over; good	Over; good	Over; good	Average; good	Over; good	Average; good	Average; good	D. Buchanan, Bargany Gardens, Dailly.
	Average	Over	Over	Under	......	......	Over	Over	......	John McInnes, Kirkmichael House Gardens, by Maybole.
BUTESHIRE	Under	Under	Under	Average; good	......	......	Average	Average; good	......	M. J. Heron, Mount Stuart Gardens, Rothesay.
	Average	Under	Average	Average	......	......	Over	Average	......	D. Halliday, Ascog.
DUMBARTONSHIRE	Average	Under	Average; good	Average	Over	......	Over; very good	Over; good	......	D. Stewart, Knockderry Castle Gardens, Cove.
	Over	Average	Over	Over	......	......	Over	Over	......	David Kerr, Ross Priory, Gartocharn.
DUMFRIESSHIRE	Average; good	......	Under; good	Under; good	......	Under; good	Average; good	Over; good	......	John Urquhart, Hoddom Castle Gardens, Ecclefechan.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
6. Scotland, W.										
DUMFRIESSHIRE (continued)	Under	Average; good	Average; good	Average; good	......	......	Average; good	Over; very good	......	James McDonald, Dryfeholm Gardens, Lockerbie.
KIRKCUDBRIGHTSHIRE	Over; very good	Average good	Over; good	Over; good	Average good	.....	Over; very good	Under; bad	Over; good	David Wilson, Cairnsmore, Palnure.
LANARKSHIRE	Average	......	Under	Average; good	......	... .	Over good	Average; good	......	John Shiells, Carstairs Gardens, Carstairs Junction.
STIRLINGSHIRE.........	Average; good	Average; good	Average; good	Over; very good	Over; very good	Average; under	Over; very good	Over; very good	......	John Middleton, Callendar House Gardens, Falkirk.
WIGTOWNSHIRE	Average; good	Over; good	Over; good	Average; good	......	......	Over; good	Average; good	... ..	John Bryden, Dunragit Gardens, Dunragit.
ENGLAND:										
2. England, N.E.										
DURHAM	Average; good	Under; good	Under	Average; good	...	......	Average; good	Average; good	Under; good	John Smith, Hylton House, North Road, Durham.
	Under	Under	Average; good	Over; good	......	Under	Average; good	Under; bad	.. ...	W. Smith, Lambton Castle Gardens.
NORTHUMBERLAND.	Average; good	Average; good	Under; good	Average; good	......	.. ...	Over; good	Over; good	......	C. W. Mayhew, 10, Olympia Gardens, Morpeth.
YORKSHIRE..............	Under	Average	Over; good	Average; good	Over; good	Over; very good	Average; good	Under; very bad	Under	W. Jackson, Dalton Hall, Beverley.
	Under	Under	Under	Under	......	Under	Average	Average; good	......	A. S. Galt, Rutherglen, Roundhay, Leeds.
	Under; bad	Under; good	Under; good	Average; good	Under; good	Average; good	Over; very good	Average; good	Under	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Over; good	Under; good	......	Alfred Gaut, The University, Leeds.
	Average	Under; bad	Average	Average	Average; good	Over	Over	Average; good	Under	A. E. Sutton, Castle Howard Gardens, Welburn.
	Under; bad	Average; good.	Average	Average	......	Over; good	Over; very good	Under; bad	......	J. G. Wilson, Chevet Park Gardens, Wakefield.
	Under	Under; good	Under	Average; good	Over; good	Average; good	Average; good	Under; bad	......	F. C. Puddle, Scampston Hall Gardens, Rillington.
	Under	Under	Under	Average	Over	Over	Average	Under	....	C. Fulford, North Riding Asylum, York.
3. England, E.										
CAMBRIDGESHIRE ...	Average; very good	Average; very good	Under; good	Under; good	Over; very good	Over; very good	Over; very good	Average; good	Average; good	R. Alderman, Babraham Gardens, Cambridge.
	Under; good	Under; bad	Under; good	Average; very good	Over; good	......	Average; very good	Over; very good	....	Thomas Spooner, Meldreth Court Gardens, Royston.
	Average; good	Average; good	Average; good	Under; good	Average; bad	Average; good	Average; very good	Over; very good	Average; good	Arthur Sewell, The Palace Gardens, Ely.
	Under	Under	Average	....	......	......	Average	Average	......	Stephen Castle, Walpole St. Andrews, Wisbech.
	Average; very good	Average; good	Under	Under	Over; very good	Under	Average	Over; very good	Under	W. Woods, Chippenham Park Gardens, Soham.
	Under; good	Average; good	Over; good	Average; very good	Over; good	Over; good	Over; very good	Average; good	Average; very good	Herbert Head, Hatley Park Gardens, Sandy.
ESSEX	Under; very good	Over; very good	Under; good	Average; good	Over; very good	Over; very good	Average; very good	Average; very good	Average; good	Arthur Bullock, Copped Hall Gardens, Epping.
	Under; good	Under; good	Under; bad	Average; very good	Average; good	Average; good	Average; very good	Average; good	Average; good	C. Wakely, County Gardens, Chelmsford.
	Average	Average	Over	Average	Over	Over	Average	Average	Average	H. Lister, Easton Lodge Gardens, Dunmow.
	Under	Under	Under	Under	......	......	Under	Average	......	H. W. Ward, Lime House, Rayleigh.
	Under; good	Average; good	Under; good	Over; very good	Over; very good	Over; very good	Average; good	Under; good	Under	John Arthurton, Debden Hall Gardens, Saffron Walden.
HUNTINGDONSHIRE.	Average; good	Average; good	Average	Over; very good	Over; very good	Over; very good	Average; very good	Average; good	Average	A. V. Coombe, Ramsey Abbey Gardens, Ramsey.
LINCOLNSHIRE	Average; good	Average; good	Under	Over; good	Over; good	Over; very good	Average; very good	Under; very good	.....	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Under	Under	Under	Average	Over	Over	Average	Under	......	H. Vinden, Harlaxton Manor Gardens, Grantham.
	Over; good	Over; good	Over	Over; very good	Over; very good	Over	Average; good	Average	Average	Fredk. Barton, Hainton Hall Gardens, Lincoln.
	Under; good	Average; good	Under; good	Average; good	Under	Under; good	Under; good	Under; good	Under	Harry Louth, Boothby Hall Gardens, Grantham.
NORFOLK	Average; good	Average; good	Under	Average	Average; good	Over; good	Over; very good	Under; bad	Over; good	J. Wynn, Sedgeford Hall Gardens, near King's Lynn.
	Over	Average	Average	Over	Average	Under	Average	Under	Average	H. Goude, Shirehall Edn. Dept., Norwich.
	Under	Over	Under	Over	Over	Average	Average	Average	Under	William Orr, High House, Church Road, Downham Market.
	Average	Average	Under	Under	......	Average	Average	Average	......	W. Shingler, Melton Constable Park Gardens.
RUTLANDSHIRE	Under	Over	Under	......	......	......	Over	Under	Average	Wm. Smith, Lyndon Hall Gardens, Oakham.
SUFFOLK	Average; good	Over; good	Average good	Over; very good	Average; good	Over; very good	Average; very good	Under; bad	......	E. G. Creek, Shire Hall, Bury St. Edmunds.
	Average	Average	Over	Over	Average	Average	Over	Average	Under	W. Messenger, Woolverstone Park Gardens, Ipswich.
	Under	Under	Average	Over	Average	Over	Average	Under	Under	Thomas Stiling, Livermere Park Gardens, Bury St. Edmunds.
	Under; very good	Over; good	Over; good	Average; good	Under; bad	Over; good	Average; good	Over; good	......	H. Coster, Ickworth, Bury St. Edmunds.
	Over; very good	Over; very good	Average; good	Average; very good	Average good	Under	Over; very good	Under; good	Average	B. Goodacre, Moulton Paddocks Gardens, Newmarket.
	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	Over; very good	Under; good	Average; good	James Hilson, Flixton Hall Gardens, Bungay.
	Average	Average	Over	......	Under	Under	Average	Under	Over	R. Evans, Gt. Barton, Bury St. Edmunds.
	Average; good	Over; good	Average	Average	Average	Average	Average	Average	Average	Alfred Andrews, High House Gardens, Wickham Market.
	Under; good	Average; good	Over; good	Over; very good	Over; very good	Over; very good	Average; very good	Average; good	Under; good	A. K. Turner, Orwell Park Gardens, Ipswich.
	Under	Average; very good	Average; bad	Average; good	Over; good	......	Average	Average; very good	......	James A. Best, Easton Park Gardens, Wickham Market
4. Midland Counties.										
BEDFORDSHIRE........	Under; good	Average; very good	Under; good	Under; good	Under; good	Under; good	Average; good	Average; very good	Under	W. H. Neild, Woburn Experimental Fruit Farm, Ridgmont, Aspley Guise.
	Over; good	Over; good	Over; good	Average; good	Over; very good	Over; good	Average; good	Under; good	......	C. J. Ellett, Chicksands Priory Gardens, Shefford.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS
4. Midland Counties.										
BEDFORDSHIRE (continued)	Under	Average	Average	Over	Under	Under	Average; good	Average; good	Average	Henry William Nutt, Ampthill Road, Flitwick.
	Under	Average	Under	Average; good	Average; good	Average; good	Average; good	Under	Under	Wm. F. Palmer, Froxfield Gardens, Woburn.
	Under	Under	Under	Over	Over	Average	Average	Under	Under	Laxton Bros., Nurserymen, Bedford.
	Under; good	Average; very good	Under; good	Over; very good	Over; very good	Over; very good	Over; very good	Under; bad	Average	Thomas W. Stanton, Hinwick Hall Gardens, Wellingborough.
	Under	Average	Average	Average	Average	Average	Average	Under	Average	J. C., Ampthill.
BUCKINGHAMSHIRE.	Average; good	Under; good	Average; good	Over; good	Average, good	Under; bad	Average; good	Average; good	Average; good	James Wood, Hedsor Park Gardens, Bourne End.
	Under; good	Average; good	Under; bad	Average; good	......	Under; bad	Average; very good	Under; good	......	James MacGregor, Mentmore Gardens, Leighton Buzzard.
	Under; good	Under; good	Under; good	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Under; good	W. Hedley Warren, Aston Clinton Gardens, Tring.
	Under	Over	Average	Over	Over	Average	Average	Average	Average	Philip Mann, Education Sub-Office, Aylesbury.
	Average; good	Average; good	Under; good	Average; good	......	......	Over; good	Under; bad	Average; good	Geoffrey Cooper, Bletchley Park Gardens.
	Average; good	Average; good	Under; very good	Over; good	Average; good	Under; very good	Over; good	Over; good	Average; good	William Brooks, Missenden House Gardens, Amersham.
	Average; good	Average; good	Over; very good	Over; very good	......	......	Over	Over; very good	Average	W. Waters, Bulstrode Gardens, Gerrards Cross.
	Under; good	Average; good	Over; very good	Average; very good	......	Average; good	Over; very good	Average; good	......	G. F. Johnson, Waddesdon Gardens, Aylesbury.
	Average; good	Average; good	Average; good	Over; very good	Over; good	Average; good	Average	Under; bad	Average	Chas. Page, Dropmore Gardens, Maidenhead.
	Under; good	Over; good	Over; good	Over; very good	......	Over; good	Average; good	Under; bad	Over	A. E. Caudle, Shenley Park Gardens, Bletchley.
CHESHIRE	Over; very good	Over; very good	Average; good	Average; good	......	......	Over; very good	Under; good	Average	Alfred N. Jones, Marbury Hall Gardens, Northwich.
	Average	Average	Under	Average	Under	Average	Average	Average	Average	John Forsyth, Hawarden Castle Gardens, Chester.
	Over; very good	Over; very good	Average; good	Average	......	Over; very good	Over	Under	......	Lion Squibbs, Bidston Court Gardens, Birkenhead.
	Under	Over	Under; good	Over; good	Over; very good	Over; very good	Average; good	Under; bad	Under	Charles Flack, Cholmondeley Castle Gardens, Malpas.
	Under; bad	Average; good	Average; good	Average; good	Over; good	Average; good	Over; very good	Under; good	Average; good	T. A. Summerfield, Alderley Park Gardens, Chelford.
	Under; good	Over; good	Average; very good	Over; good	Under; bad	Under; bad	Over; very good	Under	Under	Philip Bolt, Manor House Gardens, Middlewich.
	Under; bad	Over; very good	Under	Average	......	Average; good	Over; very good	Under; good	Average	N. F. Barnes, Eaton Hall Gardens, Chester.
DERBYSHIRE	Under	Average	Under	Average	... ..	.....	Over	Average; good	.....	Bailey Wadds, Uttoxeter New Road, Derby.
	Under; bad	Average; good	Average; good	Over; good	....	Average; good	Average; good	Under; bad	.	John Maxfield, Darley Abbey Gardens, Derby.
	Under; bad	Under; bad	Under; bad	Average; good	.. ...	......	Under	Under; bad	..	F. Jennings, Chatsworth Gardens, Chesterfield.
	Average; good	Under; good	Average; good	Over; good	......	Under; good	Over; very good	Average; good	.....	Jas. Tully, Osmaston Manor Gardens, Derby.
	Under	Under	Over	Under	.. ...	......	Average; good	Average	Under	E. Wilson, Hardwick Hall Gardens, Chesterfield.
HERTFORDSHIRE	Under	Average	Over	Average	Average	Average	Under	Average	Over	Thomas Nutting, Childwickbury Gardens, St. Albans.
	Under; good	Over; very good	Average; good	.. ...	......	....	Average good	Average; good	Average	Thos. Rivers & Son, Sawbridgeworth.
	Under; good	Over; good	Average; good	Over; very good	Average; good	......	Average; very good	Under; good	Average	H. Prime, Hatfield House Gardens, Hatfield.
	Average; good	Average; good	Under	Over; good	Over; good	Under	Under	Average	Under	Edwin Beckett, Aldenham House Gardens, Elstree.
	Under; good	Over; very good	Average	Average; good	Over; very good	Average	Average; good	Average	Under	J. G. Walker, Oak Hill Park Gardens, East Barnet.
	Under; good	Average; good	Over; good	Average; good	Over; good	Over; good	Average; good	Average; good	Average; good	E. F. Hazelton, North Mymms Gardens, Hatfield.
	Under; good	Average; good	Over; very good	Average; good	Under; good	Over; very good	Over; very good	Average; good	Under; bad	Charles A. Heath, Gt. Hallingbury Place Gdns., Bishops Stortford.
	Average	Average	Over	Under; good	Average; very good	Under	Average; very good	Average; very good	Over	W. J. Snell, Wimpole Gardens, Royston.
LEICESTERSHIRE	Under; good	Average; good	Under; good	Average; good	Over; very good	......	Average	Under; bad	......	D. Roberts, Prestwold Gardens, Loughborough.
	Under; good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Over; very good	Under; good	Under	W. H. Divers, Belvoir Castle Gardens, Grantham.
	Under; good	Under; good	Average; good	Under	Average; good	Average; good	Average; good	Average; good	Average; good	F. Ibbotson, Rolleston Hall Gardens, Leicester.
NORTHAMPTONSHIRE	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	Average; very good	Average; very good	Average; good	Robt. Johnston, Wakefield Lodge Gardens, Stony Stratford.
	Under; good	Over; very good	Over; good	Average; good	Under; bad	Over; good	Average; very good	Average; good	Over; good	C. F. Crump, Althorp Park Gardens, Northampton.
NOTTINGHAMSHIRE.	Under; bad	Average	......	Average	......	.. ..	Average	Under	.....	James B. Allan, Osberton Gardens, Worksop.
	Under; good	Under; good	Under	Average; good	Average	Over; good	Average; good	Under; bad	Under	J. R. Pearson & Sons, Lowdham
	Under	Under	Under	Average	......	Under	Average	Average	......	A. W. Culloch, Newstead Abbey Gardens, Nottingham.
OXFORDSHIRE	Over; very good	Over; very good	Average; good	Over; good	Average; good	... .	Over; very good	Average; good	Over; very good	John A. Hall, Shiplake Court Gardens, Henley-on-Thames.
	Over	Average	Over	Over	Average	Under	Average	Average	Average	Arthur J. Long, Wyfold Court Gardens, Reading.
	Average	Under	Average	Over	......	Average	Over; good	Average; good	......	T. Cradduck, Middleton Park Gardens, Bicester.
	Under; good	Under; good	Average; good	Average; good	Average; good	Under; good	Over good	Under	Under	C. E. Munday, Nuneham Park Gardens, Oxford.
	Under; very good	Average; good	Over; good	Average; very good	Average; very good	Over; good	Average; very good	Average; good	......	T. W. Whiting, Shotover Park Gardens, Wheatley.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
4, Midland Counties.										
SHROPSHIRE	Over; good	Over; good	Over; good	Over; very good	Average; good	Under	Over; good	Average	Over	Alex. Haggart, Moor Park Gardens, Ludlow.
	Average; good	Average; good	Average; good	Under; good	......	Average; good	Average; good	Under; bad	......	G. T. Malthouse, Harper-Adams Agricultural College, Newport.
	Under	Under	Average	Average	Under	Average	Average	Under	Under	George Risebrow, Hatton Grange Gardens, Shifnal.
STAFFORDSHIRE	Under	Under	Under	Average; good	Under	Under; bad	Average	Under	Under	Edwin Gilman, Ingestre Gardens, Stafford.
	Under; bad	Under; bad	Under; bad	Under	Under	Under	Average; good	Under	......	A. Cheney, Shenstone Court Gardens, Lichfield.
	Average; good	Over; good	Over; good	Average; good	......	Average; good	Over; very good	Average; good	Over	T. Bannerman, Blitbfield Gardens, Rugeley.
	Under; good	Average; very good	Under; good	Average; good	Average; good	......	Average; good	Under; bad	Under	H. Collier, Rolleston Hall Gardens, Burton-on-Trent.
	Under	Average	Under	Under	Average	Average	Under	Under	Under	W. Halliday, Patshull Gardens, Wolverhamptom.
WARWICKSHIRE	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Under; bad	Under	Under; bad	Under	Chas. Harding, Ragley Hall Gardens, Alcester.
	Under; very good	Average; very good	Under; very good	Over; good	Average; good	Over; very good	Average; very good	Under; bad	Under; good	H. Dunkin, Mount Pleasant Gardens, Warwick.
	Under	Average	Over	Average	Over	Over	Average	Under	......	Jno. Masterson, Weston House Gardens, Shipston-on-Stour.
	Average; very good	Average; good	Under; bad	Average; very good	Over; very good	Over; very good	Average; good	Under; good	Under; bad	H. F. Smale, Warwick Castle Gardens, Warwick.
5, Southern Counties.										
BERKSHIRE	Over	Over	Average	Over	Over	Average	Over	Over	Average	A. MacKellar, Royal Gardens, Frogmore, Windsor.
	Under	Average; good	Under	Average	Average; good	Average	Average	Under	Under	J. Howard, Benham Park Gardens, Newbury.
	Under	Average	Under	......	......	......	Average; good	Under	Under	F. Freed, East Hendred House Gardens, Steventon.
	Average	Average	Average	Average	Average	Average	Average	Under; good	Under	A. B. Wadds, Englefield Gardens, Reading.
	Average; very good	Average; good	Average; good	Average	Over; very good	Over	Over; good	Over; good	......	F. J Thorne, Sunningdale Park Gardens, Sunningdale
	Average; good	Average; good	Over; very good	Over; good	Average; good	Over; good	Over; very good	Over; very good	Average	F. Rivers, Carswell Manor Gardens, Faringdon
	Under; bad	Under; good	Under	Average; good	.. ...	Average; good	Average; good	Under; good	......	E. Harriss, Lockinge Park Gardens, Wantage.
	Average; good	Average; good	Average; good	Average; good	Average; good	.....	Average	Under; bad	Average	Hy. Young, Park Place Gardens, Henley-on-Thames.
	Average; good	Over; good	Average	Under	Over; very good	......	Over; very good	Average; good	Average	J. Atkinson, Oakley Court Gardens, Windsor.
	Over; good	Over; good	Average; good	Average	Under; bad	Under	Over	Over	Under	William Tapping, Shinfield Manor Gardens, nr. Reading.
	Under	Average	Under	Under	Under	Average	Average	Average	Average	Thomas Wilson, Castle Gardens, Wallingford.
	Average; good	Under; good	Over; very good	Under; good	Average	Under; bad	Over; good	Average	Average	C. E. Lever, Hungerford Park Gardens, Hungerford.
	Over; good	Average; good	Average; good	Average	Average	Average; good	Over; good	Average; good	Average; good	William Turnham, Greenlands Gardens, Henley-on-Thames.
	Average; good	Over; good	Under	Average	Average; good	Average; good	Average; good	Under	......	W. R. Cox, Barton Court Gardens, Kintbury, Hungerford.
	Under; good	Over; very good	Over; very good	Average; good	Average; good	Under; good	Over; very good	Average; good	Under	L. T. Petty, Arlington Manor Gardens, Newbury.
DORSETSHIRE............	Over; very good	Over	Average	Average	Average	Under	Over; very good	Average	Over	T. Turton, Castle Gardens, Sherborne.
	Over; good	Average; good	Over; good	Over; good	Average	Average	Over; good	Average; good	Over; very good	Thos. Denny, Down House Gardens, Blandford.
	Average; good	Average; good	Average; good	Under; good	Average; good	Under; good	Over; very good	Average; good	......	J. Jaques, Bryanston Gardens, Blandford.
	Over; good	Over; good	Over	Over	Over	Under	Average; good	Average; good	Average	A. Shakelton, Forde Abbey, Gardens, Chard.
	Average; good	Average; good	Average; good	Over; good	Over; good	Average; good	Over; very good	Over; very good	Average; good	F. Olver, Minterne, Cerne Abbas.
	Over; good	Over; good	Over; very good	Over; good	Over; very good	Average	Over; very good	Under; good	Over	E. C. Parslow, County Offices, Dorchester.
	Over; very good	Average; very good	Over; very good	Under	Under	Under	Average; bad	Average; bad	Average; good	H. Kempshall, Abbotsbury Gardens, Abbotsbury.
HAMPSHIRE	Over; good	Average; good	Over; good	Over; very good	Average; very good	Average; good	Over; very good	Average; good	Over; very good	Lewis Smith, Cadland Park Gardens, Fawley, Southampton.
	Average; good	Average; good	Over; good	Average; good	......	Under	Average; good	Under; good	Average	A. G. Nichols, Strathfieldsaye Gardens, Mortimer, R.S.O.
	Over; good	Average; very good	Average; bad	Average; good	Average; good	Average; good	Over; very good	Over; good	Average	A. J. Legge, Dogmersfield Park Gardens, Winchfield.
	Over; very good	Over; very good	Average; good	Average; good	Average; good	......	Over; very good	Over; good	Average; good	Henry Martin, Bartley Lodge Gardens, Cadnam, Southampton.
	Under; bad	Over; good	Over; good	Over; good	Average; good	Average; good	Average; good	Under; bad	.. ...	A. W. Blake, Highclere Castle Gardens, Newbury.
	Over	Average	Over	Over	Over	Under	Average	Under	Average	Henry Tullett, Ashe Park Gardens, Overton.
	Average; good	Average; good	Average	Average	......	......	Over; very good	Average; good	Under	L. Carsley, Stratton Park Gardens, Micheldever.
	Over; very good	Average; good	Over; good	Average; good	Over; good	......	Over; very good	Over; good	Average	E. Molyneux, Swanmore Park Bishop's Waltham.
	Average; good	Average; good	Over; good	Under; bad	Average; good	... ..	Average	Under; good	Under; very good	James Elder, Hursley Park Gardens, Winchester, Hants.
KENT	Average; good	Average; good	Average; good	Over; very good	Average; good	......	Average; good	Average; good	Under	Geo. Woodward, Barham Court, Maidstone.
	Average	Over	Under	Over	......	......	Average	Under	Over	George Bunyard, Royal Nurseries, Maidstone.
	Average; good	Average: good	Average; good	Average	Over; very good	......	Average; over	Under	Under	William Lewis, East Sutton Park, Maidstone.
	Average; good	Average; good	Average; good	Over; good	.....	......	Average; good	Average; good	Average; good	Geo. Fennell, Bowden, Tonbridge.
	Average	Average	Average	Average	......	......	Average	Average	Average	Geo. Lockyer, Mereworth Gardens, Maidstone.
	Average; good	Average; good	Average; good	Average; good	Over	Average	Average; very good	Average; good	Average	J. T. Shaun, Bettshanger Park Gardens, Eastry.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
5. Southern Counties.										
KENT (continued)	Under	Average	Under	......	......	......	Over; good	Over	......	Charles E. Shea, The Elms, Foots Cray.
	Average	Average	Average	Over; good	Over; very good	Under; bad	Over; very good	Average	Average; good	H. Cannell and Sons, Eynsford.
	Over; good	Over; good	Average; good	Over; very good	Average; good	Average; good	Average; good	Average; good	Average	J. G. Weston, Eastwell Park Gardens, Ashford.
MIDDLESEX	Average	Average	Average	Average	Over; good	Over	Average	Average	Average	H. Markham, Wrotham Park Gardens, Barnet.
	Average; good	Average; good	Under	Average	Average	......	Average	Average; good	Average; over	W. Poupart, Marsh Farm, Twickenham.
	Average; good	Average; good	Over; good	Average; good	Average; good	Average; good	Average; good	Average; good	Average; good	John Weathers, Park View, Isleworth.
	Average; good	Average; good	Under	Average	......	......	Average	Average	......	James Hawkes, Osterley Park Gardens, Isleworth.
	Average	Under	Under	Average	Average	......	Average	Average	Over	W. Bates, Cross Deep Gardens, Twickenham.
	Over; good	Average; good	Average; very good	Over; good	Over; good	Average; good	Over; good	Over; good	Over	William Fulford, The Nurseries, Hanworth
	Average; good	Average; good	Average; good	Over; very good	Average; good	......	Average; good	Under	......	James Hudson, Gunnersbury House Gardens, Acton.
SURREY	Over; good	Under; good	Under; bad	......	Under	......	Under; bad	Under; bad	Under	S. T. Wright, R.H.S. Gardens, Wisley, Ripley.
	Over	Over	Over	Over	Over	Average	Average	Under	Over	Geo. Kent, Norbury Park Gardens, Dorking.
	Average; good	Average; good	Average; good	.. ...	......	......	Over; good	Average; good	Average; good	Geo. Halsey, Riddings Court Gardens, Caterham Valley.
	Over	Average	Average	Average	.....	......	Average	Under	Average	James Watt, Mynthurst Gardens, Reigate.
	Average	Average	Average	Average	Average	Average	Average	Average	Average	James Lock, Oatlands Lodge Gardens, Weybridge.
	Average; good	Over; very good	Under	Over: very good	Average; good	Average; good	Average; good	Over; very good	......	Thos. Smith, Coombe Court Gardens, Kingston Hill.
SUSSEX	Average; good	Average; good	Over; good	Over; very good	Average; good	Average; good	Over; very good	Over; good	......	Thos. Tyson, Wykehurst Park Gardens, Hayward's Heath.
	Under; good	Over; very good	Over; good	Over; very good	Average; good	......	Over; very good	Under; bad	Average; good	J. Muddell, Sedgwick Park Gardens, Horsham.
	Average	Over; bad	Over	Average	Average; good	Average	Over; very good	Average; good	Average	A. Wilson, Eridge Castle Gardens, Tunbridge Wells
	Average	Over	Over	Over	......	......	......	Average	Average	William E. Bear, Magham Down, Hailsham.
	Average; good	Average; good	Over; good	Over; good	Over; very good	Under; bad	Average; good	Under; good	......	W. H. Smith, West Dean Park Gardens, Chichester.
	Under; very good	Average; very good	Over; very good	Average; good	Average; good	......	Average; very good	Average; good	Over; very good	W. J. Langridge, Ote Hall Gardens, Burgess Hill.
	Under; good	Over; good	Under; good	Average; very good	......	......	Average; good	Under; bad	Under	W. Goaring, Agricultural College, Uckfield.
	Over; good	Over; good	Average; good	Over; good	Average; good	Over; very good	Over; good	Under	Average; good	J. W. Buckingham, Milland Place Gardens, Liphook.
WILTSHIRE	Average; good	Average; good	Under good	Average; good	......	......	Average; good	Average; good	......	George Brown, Bowood Gardens, Calne.
	Over; very good	Over; very good	Average; good	Average; good	Over; very good	Average; good	Over; very good	Average; very good	Average; good	Thomas Challis, Wilton House Gardens, near Salisbury.
	Average	Average	Average	Average	Average	...	Average	Average; bad	Under	Thomas Sharp, Westbury.
	Under; good	Over; very good	Under	Over; good	Over; good	Average; good	Average; good	Average	Average; good	T. W. Birkinshaw, Compton Bassett Gardens, Calne.
	Average; good	Over; good	Over; good	Average; good	Average	......	Over; good	Under; good	Average	Henry Gandy, Longleat Gardens, Warminster.
7. England, N.W.										
CUMBERLAND............	Average; very good	Average; good	Over; good	......	......	......	Over; very good	Average; good	.. ...	W. B. Little, 40 Petteril Street, Carlisle.
	Average; good	Over; good	Average; good	Over; very good	Under; good	.. ...	Over; very good	Under; bad	......	C. Milne, Greystoke Castle Gardens, Penrith.
	Under; bad	Average; good	Over; good	Average; good	......	Under; good	Average; good	Average; good	......	F. Clarke, Lowther Castle Gardens, Penrith.
LANCASHIRE	Average; good	Average; very good	Under; good	......	......	......	Average; very good	Over; very good	......	A. J. Sowman, County Offices, Preston.
WESTMORELAND	Under; good	Under; good	Average; good	Over; good	......	......	Over; very good	Average; good	......	W. A. Miller, Underley Hall Gardens, Kirkby Lonsdale.
	Under	Average	Over	Over	......	Under	Average	Average	Under	J. Moorhouse, Dalton Hall Gardens, Burton.
	Average	Average	Over	......	Over	......	Over	Over	......	W. Caton, Helme Lodge Gardens, Kendal.
8. England, S.W.										
CORNWALL	Average; good	Average; very good	Over	Average	Under; good	......	Average; very good	Average; very good	......	W. Andrews, Tregothnan Gardens, Truro.
	Over; good	Average; good	Average; bad	Over; good	Under; bad	......	Over; very good	Over; very good	......	Frank J. Clark, Tehidy Park Gardens, Camborne.
	Over; good	Average	Under	Average; good	Average	Under	Over; very good	Over; very good	Average	J. Spilsbury, Clowance and Pencarrow Gardens.
DEVONSHIRE	Over; good	Over; good	......	Under	Under	......	Over; good	Over; good	......	Geo. Baker, Membland, Newton Ferrers, near Plymouth.
	Over; good	Average; good	Average; good	Over; good	Average; good	......	Over; very good	Over; very good	Average; good	E. E. Bristow, Castle Hill Gardens, South Molton.
	Over; good	Average	Average	Average; good	Over; good	Under; good	Over; good	Average	......	Thomas H. Bolton, Powderham Castle Gardens, Exeter.
	Over; very good	Average; good	Average; good	Over; good	Over; very good	Under	Average; good	Under; very good	Over; good	Robert Veitch & Son, Royal Nurseries, Exeter.
	Average; good	Average; very good	Average; good	Over; good	Under; very good	Under; good	Average; good	Average; very good	......	W. Lock, Eastcliffe Gardens, Teignmouth.
	Over; very good	Average; good	Over; good	Under; bad	Average; good	Average; good	Over; very good	Over; very good	Average; good	E. H. High, Bicton Gardens, East Budleigh.
GLOUCESTERSHIRE...	Under	Over	Over	Average	Over: good	Over; good	Average	Under	Under	William Keen, Bowden Hall Gardens, near Gloucester.
	Average; good	Over; good	Over; good	Over	Average; good	Under	Average; good	Under	Average	John Banting, Tortworth Gardens, Falfield.
	Average; very good	Over; good	Over; good	Under; good	Over; good	Over; good	Under: good	Under; good	......	J. Pearce, Badminton Gardens, Gloucester.
	Average	Average	Under	Average	Under	Under	Average	Under	......	Wm. J. Jefferies, Cirencester.
	Average; good	Average; good	Under; good	Over; very good	Under	Average	Average; good	Under	Under	G. H. Hollingworth, County Education Office, Gloucester.
	Average; good	Over; very good	Average; good	Average; good	Over; very good	Average; good	Over; very good	Average; good	Average	F. C. Walton, Stanley Park Gardens, Stroud.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
8. England, S.W.										
GLOUCESTERSHIRE... (continued)	Over	Over	Average	Average	Average	Under	Average	Under	Average	Arthur Chapman, Westonbirt Gardens, Tetbury.
	Average	Under; good	Average	Average	Average; good	Average	Over; good	Over; good	Average	W. H. Berry, Highnam Court Gardens, Gloucester.
HEREFORDSHIRE......	Average; good	Average; very good	Under; very good	Over; good	Average; very good	Average; very good	Over; good	Under; good	Over; good	A. Buckingham, Stanage Park Gardens, Brampton Brian.
	Over; good	Average; good	Under; good	Under	......	......	Average; good	Under	Over	Thomas Spencer, Goodrich Court Gardens, Ross.
	Under; good	Average; good	Under; good	Average; good	Over; very good	Average; good	Under; bad	......	Average; good	George Mullins, Eastnor Castle Gardens, Ledbury.
	Under; very good	Over; good	Over; good	Over; good	Average; good	Average; very good	Over; good	Under	Under	A. J. Morris, Downton Castle Gardens, Ludlow.
MONMOUTHSHIRE ...	Average; good	Average; good	Over; good	Over; good	Under; good	Over; good	Average; good	Average; good	Average	Thos. Coomber, The Hendre Gardens, Monmouth.
SOMERSETSHIRE	Under; good	Under; good	Average; good	Average; good	Average; good	Over; good	Over; good	Average; good	Over; good	George Shawley, Halswell Park Gardens, Bridgwater.
	Under	Average	Average	Over	Under	Under	Over	Average	Average	J. T. Rushton, Barons Down Gardens, Dulverton.
	Average; good	Over; very good	Under; bad	Average; good	Average; good	Under	Average; very good	Average; good	Average	W A. Farmer, Knowle Gardens, Dunster.
	Over; very good	Average	Over	Over	Average	Average	Over; very good	Average	......	Samuel Kidley, Runnington Nurseries, Wellington.
	Over; very good	Over; very good	Over; very good	Average; good	Average; good	Average; good	Over; very good	Over; very good	Over; very good	E. A. Hussey, Leigh House Gardens, near Chard.
WORCESTERSHIRE ...	Under	Under; good	Under	Over; good	Average; good	Average; good	Average; good	Under	Over	A. Young, Witley Court Gardens, Worcester.
	Under; good	Under; good	Under	Average	.. ...	Under	Average; good	Under; bad	Average	C. A. Bayford, Davenham Gardens, Malvern.
	Under; bad	Under; bad	Under; bad	Under; good	Under; good	Under; good	Average; good	Under; bad	Under; good	W. Crump, Madresfield Court Gardens, Malvern.
	Under; good	Average; good	Under; good	Average; very good	Average; very good	Average; good	Over; very good	Under; bad	......	Thos. Watkins, The Grange Gardens, Claines.
	Under	Average	Over	Average	......	......	Over; very good	Average; very good	Average	Ernest Avery, Finstall Park Gardens, Bromsgrove.
	Under; good	Under; good	Under	Under; good	.....	Under; good	Average; good	Under; good	Under	James Udale, Ombersley Road, Droitwich.

WALES :

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
ANGLESEY	Over; good	Over; very good	Average; good	Average good	Average; good	Average; good	Average; good	Average; good	Average; good	W. Tiso, Glyn Garth Palace Gardens, Menai Bridge.
CARDIGANSHIRE	Over; good	Over; good	Over; very good	Over	Over; good	......	Over	Average	......	W. Phillips, Derry Ormond Park Gardens, Llangybi.
CARNARVONSHIRE...	Average; good	Over; good	Over; good	Average; good	Over; good	......	Over; very good	Average; good	.. ..	J. S. Higgins, Glynllivon Park Gardens.
DENBIGHSHIRE	Average; good	Average	Average	Average	Average	Average	Over	Average; good	.. ...	J. A. Jones, Chirk Castle Gardens, Ruabon.
FLINTSHIRE	Over; very good	Over; very good	Over; good	Over; good	Over; good	Average; good	Over; very good	Average; good	......	J. Barnard, Mostyn Hall Gardens, Mostyn.
GLAMORGANSHIRE...	Over	Over	Average	Over	Over	......	Over	Over	Average	Richard Milner, Margam Park Gardens, Port Talbot.
	Average; very good	Over; very good	Under	Over; very good	Average; good	......	Over; very good	Over; very good	Under	C. T. Warmington, Penllergaer Gardens, Swansea.
MONTGOMERYSHIRE	Under; good	Average; very good	Under; bad	Under; good	......	... ..	Average; very good	Under; bad	......	A. Gribble, Plas Machynlleth Gardens, Machynlleth.
PEMBROKESHIRE......	Over; good	Average; good	Over; good	Over; good	Average	.	Over; good	Average; good	Over	Geo. Griffin, Slebeck Park Gardens, Haverfordwest.
	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	Average; good	Over; very good	Over; very good	Over; very good	W. A. Baldwin, Clynfiew Gardens, Boncath, S.O.
RADNORSHIRE	Average; good	Over; good	Over; bad	Average; good	Average; good	Over; good	Average; good	Under; bad	Over; good	J. MacCormack, Maesllwch Castle Gardens, Glasbury.
	Under	Over; very good	Average	Average	......	......	Average	Average	Under	Wilson Palliser, Norton Man Gardens, Norton, R.S.O.

IRELAND :

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
9. Ireland, N.										
DUBLIN	Over; very good	Average; very good	Under; bad	Average; good	Average; very good	......	Over; very good	Average; good	.. .	Robt. Duthie, Chief Secretary's Lodge Gardens, Phœnix Park, Dublin.
FERMANAGH	Under	Average	Average	..	Over	......	Over	Under	......	Thomas Shiels, Lanesborough Gardens, Belturbet
	Over; good	Average; very good	Average; very good	Average; good	......	......	Average; good	Under; bad	Average	J. Moncrieff, Florence Court Gardens, Enniskillen
LOUTH	Over; good	Over; good	Under; bad	Over; bad	Over; very good	......	Under; bad	Under; bad	......	S Cranston, Castle Bellingham Gardens.
MEATH	Average; good	Under	Over; good	Average; very good	......	......	Over; good	Under	Average	Michael McKeown, Julianstown, Drogheda.
	Under; bad	Average	Average	Average	Average	Average	Over	Average	Average	J. B. Pow, Dunsany Castle Gardens.
MONAGHAN	Under	Over; good	Average; good	Average; good	......	......	Under; good	Under; good	......	J. Hepburn, Dartrey Gardens.
TYRONE	Over; good	Over; very good	Over	Over	......	......	Over; good	Over; very good	... .	Fred. W. Walker, Sion House Gardens, Sion Mills.
WESTMEATH	Under	Over	Over	Over	Over	Under	Over	Under	Under	Geo. Bogie, Pakenham Hall Gardens, Castlepollard.
10. Ireland, S.										
CARLOW.....	Average	Over	Over	Over	Average; good	Average	Over	Over; very good	. .	W. F., Rathvilly.
CORK	Over; good	Over; good	Over; good	Average	......	......	Over; very good	Under; good	......	Maurice Colbert, Aghern Gardens, Conna.
	Over; good	Over; good	Over; good	. . .	......	......	Under; good	Under; good	. ..	I. Dearnaby, Magazine Road, Cork.
	Over; good	Over	Average	Average	......	......	Over; good	Over; good	.. ...	Pat Sheehan, Glenville Manor Gardens, Fermoy.
KING'S CO.	Average; good	Average; good	Under; bad	Average; good	Average; good	Under; good	Over; very good	Under; good	Average; good	E. Clarke, Claremount, Garry Castle, Banagher.
KILDARE	Under	Average	Average	Under	Under	Average	Average	Under	. ....	Frederick Bedford, Straffan House Gardens
	Under	Over	Average	Over	Over	Over	Over	Under	Under	Alexr. Black, Carton, Maynooth.
LONGFORD	Under; bad	Average; very good	Average; good	Average; good	Under; bad	......	Average; very good	Average; very good	......	J. A. Boyle, Castle Forbes Gardens, Newtown Forbes.

CONDITION OF THE FRUIT CROPS—(*continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
IRELAND:										
ROSCOMMON	Under	Average; good	Average; good	Average	Average	......	Over; good	Average	......	Terence Rogers, Frenchpark House Gardens.
TIPPERARY	Under; good	Average; good	Average; good	Over; very good	......	......	Over; very good	Under; bad	Under; bad	John Fraser, Shanbally Castle Gardens, Clogheen, Cahir.
WATERFORD	Over; very good	Over; very good	Average; good	Over; very good	Average; very good	......	Over; very good	Over; very good	......	Thomas Dunn, Strancally Castle Gardens, Tallow.
	Average; good	Over; good	Under; good	Average; good	Over; good	......	Average; very good	Average; good	Under; bad	David Crombie, Curraghmore Gardens, Portlaw.
CHANNEL ISLANDS:										
GUERNSEY	Over; good	Under; good	Average; good	Average; good	Average; good	......	Over; very good	Over; good	......	C. Smith & Son, Caledonia Nursery, Guernsey.
JERSEY	Average; good	Average; good	Under; good	Average; bad	Average; good	Under; bad	Average; good	Average: good	......	Thomas Sharman, Imperial Nursery, St. Heliers.
ISLE OF MAN:										
DOUGLAS	Average; good	Average; good	Under	Under	......	......	Over; good	Average; bad	......	James Inglis, Brunswick Road Nursery.

SUMMARIES.

SCOTLAND.

Records	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots	Small Fruits.	Strawberries.	Nuts.
Number of Records ...	(52)	(48)	(50)	(52)	(20)	(22)	(52)	(52)	(4)
Average...	29	24	15	24	12	11	16	25	2
Over	9	13	24	18	5	7	34	15	1
Under	14	11	11	10	3	4	2	12	1

ENGLAND.

Number of Records ...	(209)	(209)	(206)	(199)	(159)	(153)	(214)	(209)	(151)
Average	79	110	75	101	75	64	120	91	78
Over	40	61	69	71	55	40	83	28	25
Under	90	38	71	27	29	49	11	90	98

WALES.

Number of Records	(12)	(12)	(12)	(12)	(10)	(5)	(12)	(12)	(7)
Average	4	4	4	5	5	4	4	7	2
Over	6	8	6	6	5	1	8	3	3
Under	2	—	2	1	—	—	—	2	2

IRELAND.

Records	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records ...	(21)	(21)	(21)	(19)	(13)	(6)	(21)	(21)	(8
Average...	4	9	11	11	6	3	4	5	
Over	8	11	6	7	5	1	14	4	
Under	9	1	4	1	2	2	3	12	-

CHANNEL ISLANDS.

Number of Records ...	(2)	(2)	(2)	(2)	(2)	(1)	(2)	—	
Average	1	1	1	2	2	—	1		—
Over	1	—	—	—	—	—	1		
Under	—	1	1	—	—	1	—	—	

ISLE OF MAN.

Number of Records ...	(1)	(1)	(1)	(1)			(1)	(1)	
Average	1	1	—	—	—	—	—	1	
Over	—	—	—	—	—	—	1	-	
Under	—	—	1	1	—		—		

GRAND SUMMARY, 1914.

Number of Records ...	(297)	(293)	(292)	(285)	(204)	(187)	(302)	(295)	(170)
Average	118	149	107	143	100	82	145	129	86
Over	64	94	96	102	70	49	141	116	29
Under	115	50	89	40	34	56	16	50	55

SUMMARY OF 1913 FOR COMPARISON.

Number of Records ...	(256)	(245)	(248)	(211)	(167)	(158)	(249)	(248)	(142
Average	121	22	40	71	23	5	127	91	[illegible]
Over	29	1	5	3	1	1	106	148	
Under	106	222	203	137	143	152	16	9	11

WINTER-FLOWERING HYBRID BEGONIAS.

THIS race of Begonias, which originated from crossings between Begonia socotrana and varieties of the tuberous rooting section, is a very great acquisition to winter-flowering plants. The flowers of some varieties are borne in stiff erect stems, whilst others have a pendant habit, such as Clibran's Pink, which carries as many as twelve blooms in a cluster, each bloom measuring 3 inches across. The leaves of these Begonias are large and of a beautiful, glossy green, and serve to show off the flowers to the best advantage. Some growers find a little difficulty in cultivating this race, and for the benefit of these I describe my own methods, which have proved satisfactory.

Propagation may be carried out any time between April and August, when the growths that rise from the axils of the leaves are sufficiently large to provide suitable cuttings, or shoots from the tubers may be taken that come up from the soil just like suckers. The cuttings should be inserted singly in thumb pots, in a compost of loam and leaf mould in equal proportions, with plenty of silver sand added. After inserting the cuttings, they should be given a watering and the compost allowed to drain until dry, then they should be plunged into coconut fibre in a propagating case. The glass of this case will need to be wiped three or four times a day in order to keep it free of moisture and prevent the cuttings from damping. When it is known that the cuttings have rooted, a little air may be admitted to the frame, keeping the plants there for a day or two longer until they have hardened a little, when they may be potted into 4-inch pots. The compost for this re-potting should be of fibrous loam three parts, leaf mould one part, and peat one part, with sprinklings of broken charcoal and sand. After this stage they should be grown in a house where the atmospheric temperature does not fall below 60°, and atmospheric moisture should be maintained by damping the floor twice each day, and by spraying the plants lightly on bright days. If the plants are exposed to direct sunshine they may require a slight shade during the hottest hours of the day.

Directly the plants have rooted through the compost in the 4-inch pots, they should be re-potted again into the pots in which they will flower. Pots of 6-inch diameter are sufficiently large. The compost may be the same as for the previous potting, except for the addition of a moderate quantity of bone-meal. Cultivate the plants in the same conditions as before, and take care to admit air to the structure on all favourable occasions. When the plants have rooted through the soil again and are growing freely, waterings twice a week with diluted liquid cow manure may be applied with advantage.

The plants are sometimes subject to the attacks of a mite, and also of white fly, and should be fumigated about every fortnight, taking care to ascertain that the foliage is dry before fumigating is commenced, or the leaves may suffer injury.

Varieties which have proved very satisfactory with me are Elatior, Ensign, Clibran's Pink, Beauty of Hale and Bank Hall. *Grower.*

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financiol matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

APPOINTMENTS FOR AUGUST.

SATURDAY, AUGUST 1—
Société Française de Londres Meet.

MONDAY, AUGUST 3—
Bletchley and Fenny Stratford Hort. Soc. Sh.

TUESDAY, AUGUST 4.
Leicester (Abbey Park) Fl. Sh. (2 days). Scottish Hort. Assoc. meet.

FRIDAY, AUGUST 7—
Perthshire Sweet Pea and Rose Soc. Ex. (2 days). Dundee Hort. Assoc. meet.

SATURDAY, AUGUST 8—
Stirling Hort. Assoc. outing to Callander Park.

TUESDAY, AUGUST 11—
Roy. Hort. Soc. Coms. meet and Nat. Gladiolus Soc. combined show.

THURSDAY, AUGUST 13—
Taunton Deane Hort. Soc. Sh

MONDAY, AUGUST 17—
Pitsmoor Fl. Sh.
Sweet Pea Sh. at Sheffield.

TUESDAY, AUGUST 18—
Brighton Fl. Sh. (2 days).

WEDNESDAY, AUGUST 19—
Shropshire Hort. Soc. Sh. at Shrewsbury (2 days).

THURSDAY, AUGUST 20—
Aberdeen Roy. Hort. Soc. Sh. (3 days).

FRIDAY, AUGUST 21—
Forfar Hort. Soc. Sh. (2 days).

TUESDAY, AUGUST 25—
Roy. Hort. Soc. Coms. meet. Newcastle Fl. Sh. (3 days).

THURSDAY, AUGUST 27—
Dundee Hort. Soc. Sh. (3 days).

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.2.

Actual Temperatures :—
London, *Wednesday*, July 29 : Max. 62° ; Min. 53°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, July 30 (10 a.m.) ; 29.2 ; Temp. 63°.—Weather—Dull.
Provinces, *Wednesday*, July 29 : Max. 71°, Weston-super-Mare ; Min. 50°, Llandudno.

The Fruit Crops.

The present issue contains our annual rereport on the conditions of the hardy fruit crops in these Isles, and we venture to think that the report is of such a character as to justify the liveliest feelings of satisfaction. It is not in the nature of things that perfect crops should be looked for in the case of trees that are exposed to all the vicissitudes of our chastening climate; the winds blow and rains descend or not for reasons totally unconnected with the aspirations of fruit cultivators, and the trees, being subject to severe fluctuations of temperature and water supply, often experience checks that the wit of man is quite unable to prevent. But in addition to the discouragement arising from unsuitable weather conditions at particular periods, there are the equally grave risks caused by the numberless pests and diseases that are ever ready to prey upon cultivated plants, and are irresistibly attracted by such as are capable of bearing choice fruits. In face of all the difficulties surely the wonder is not that we do not obtain perfect crops, but that our fruit stores and markets are supplied with the quantities that we have come to regard as the average or normal yield.

If we consider the crops in detail we shall find that the Apple crop was below the average last year, and the present figures show that this year's yield will likewise be less than usual, but the deficiency is decidedly less marked, for of 297 returns there are 182 reports that are equal to or "over" and only 115 below "average." As Apples are the principal crop the increased cropping indicated in the grand summaries is very welcome. There is a striking improvement in Pears, for 1913 was a very bad Pear season—the returns showed 222 deficient crops and only 23 that were average. This year out of 293 returns so many as 243 are average or over average. It is evident, therefore, that save for possible contingencies unforeseen at the present, there will be a very plentiful supply of Pears this season. Plums were almost as scarce last year as Pears, but this season the yield will be much more liberal, for there are only 89 deficient crops reported out of total returns numbering 292. Cherries have been abundant almost everywhere, whilst last season the crops were unusually meagre.

The same good reports are given of Peaches: indeed the improvement is even of greater degree than in any kind of fruit so far considered. Last year there were 143 under average reports out of 167 returns, whilst this year we have 204 returns and only 34 crops below the average yield. Apricots have 56 "unders" out of a total return of 187, but last year there were so many as 152 unsatisfactory reports out of a total of 158. Small fruits, too, are better, notwithstanding the excellent crops harvested last season. For although the number of under average reports is the same, namely, sixteen, the total returns are 302 against 249. Strawberries alone of all the crops enumerated in our tables show a falling off as compared with last year. Then, the number of returns was 248, and there were only nine reports of under average crops; this year there are 295 returns and 50 reports of deficient crops, so the difference is distinctly against the present crop. Our last column is devoted to Nuts, and last year, it will be remembered, the scarcity of the Nut crop was a notable feature of the season. In our 142 returns there were no fewer than 111 reports of under average crops. This year the circumstances are more favourable, for of 170 returns there are only 55 unsatisfactory reports.

These details should suffice to encourage the hopes of the consumer of British-grown fruits, and it may be hoped that they indicate conditions that will prove profitable to the cultivator, for on his enterprise and skill depend undoubtedly the fortunes of this national industry.

Protection against Plant Pests. The Rome Convention.

The object of the Rome Convention is to bring about by legislative and administrative measures between the countries adhering to the Convention mutual and effective action to prevent the introduction and extension of plant pests.

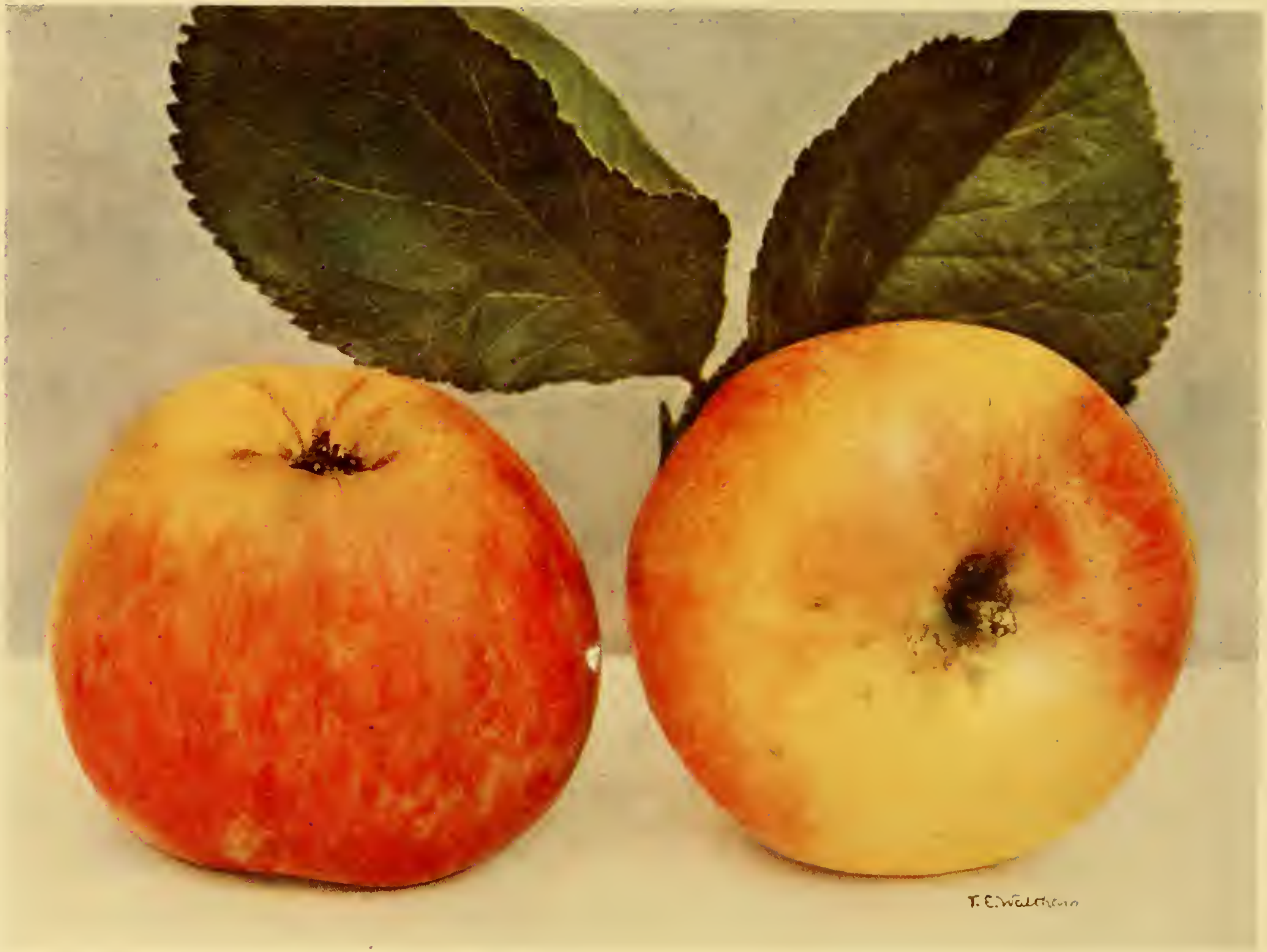
In order to carry out this object the Convention contemplates (1) State inspection of nurseries, gardens, hothouses and other establishments devoted to the trade of living plants (plants, cuttings, grafts, bulbs and cut flowers). (2) State regulation of transport and packing of plants. (3) The establishment in each of the adhering countries of a Government department of Phytopathology, to give effect to inspection, to control transport and to issue certificates; and (4) the foundation of one or several research institutions in which the scientific and technical investigation of plant pests shall be conducted.

The Horticultural branch of the Board of Agriculture is in consultation with a committee formed of members appointed by the Horticultural Trades Association and by the Royal Horticultural Society, with the object of discovering whether opinion in this country is or is not favourable to our adhesion to the Convention.

The committee has held several meetings but, as might be expected, has found considerable difficulty in recommending unconditional acceptance of the terms of the Rome Convention. The difficulties in the way of such an acceptance are due to the uncertainty attaching to the meaning of the terms of several of the articles of the Convention.

Thus Article 5 of the Convention provides that living plants—in the sense already indicated—may be imported only if they are accompanied by a phytopathological certificate issued by competent officials of the exporting country. The committee is anxious to know whether a phytopathological certificate issued by a responsible body will suffice to allow of the introduction of living plants from a country which is not a signatory to the Convention. It is no less anxious to know whether this Article prevents the importation of plants from a "non-contracting" State. If it is shown that adhesion to the Conference does not limit nor prevent the importation of plants from non-adhering countries, the committee is prepared, subject to one other proviso, to recommend that this country join the Convention. This proviso is that cut flowers shall not require to be accompanied by a certificate of freedom from plant pests. For, in the opinion of those engaged in the cut-flower industry, to require a certificate with each consignment of cut flowers would destroy the import trade. It is to be observed that the question whether such a destruction of the import trade in cut flowers is or is not desirable lies outside the reference to the committee. The Rome Convention has for its purpose not an examination or change in fiscal policy, but the reduction of the enemies of vegetation. Hence the committee had only to consider whether the introduction of cut

Supplement to the "Gardeners' Chronicle."



NEW CULINARY APPLE, PEACEMAKER

(R.H.S. Award of Merit, October 7, 1913).

flowers is likely to spread plant diseases. They were of opinion that it is not, and recommend, therefore, that cut flowers shall be excluded from the scope of the Convention.

The net result of the deliberations of the committee is that the Horticultural branch of the Board of Agriculture has undertaken to obtain the official views of the Convention on the points above indicated.

The committee in its written expression of opinion has added two riders which are of importance. It recommends, in the first place, that negotiations should be entered into between this country and the Dominions, etc., with the object of establishing a phytopathological convention within the Empire in order to facilitate trade between the home country and the Dominions and Dependencies, and in the second place it advises that, in the event of the Rome Convention meeting again, or in the event of a similar convention being summoned, British representatives should include persons interested and engaged in horticultural trade.

Informed opinion will agree that the committee has acted wisely in making sure of the nature and scope of the commitments involved by adhesion before recommending this country to join the Convention.

Coloured Plate.—Apple Peacemaker is a new culinary variety, raised from Houblon crossed with Rival, and received the Award of Merit of the Royal Horticultural Society on October 7, 1913, when specimens were submitted to the Fruit and Vegetable Committee by Mr. Wm. Pope, Welford Park Gardens, Newbury. It is of the Chas. Ross type (round, large), but not quite so regular in outline, and the colour is paler. The tree is said to be a good and consistent bearer, and the fruit is in season throughout September.

Appointment of Entomologist by R.H.S.—At their meeting on the 28th ult. the President and Council of the Royal Horticultural Society appointed Professor H. Maxwell-Lefroy, M.A., F.Z.S., F.E.S., of the Imperial College of Science, South Kensington, as Entomologist at the Society's gardens at Wisley, in connection with their scheme for the development of the gardens and of the practical and scientific work there. By special permission, Professor Lefroy will hold the dual appointment of Entomologist to the Society and to the Imperial College.

A Large Banksian Rose.—We have received from Mrs. Charlotte M. Brown, Brightstone, Isle of Wight, a photograph, which unfortunately is not suitable for reproduction, of a large Banksian Rose in her garden. The Rose is planted near an old summerhouse, which it has entirely covered, and the stem is 8 inches in circumference near to the ground level. It has rambled up other trees, including a Pear, 40 feet high, reaching to the top. It has also covered entirely two Yew trees, and is encroaching on a third. The plant was a glorious sight this May, for having grown through, it flowered on both sides of these trees. Our correspondent writes: "It was in bloom in Christmas week, and I had sprays cut from it, and again in the middle of January, and it was full of buds then, but frost and easterly winds nipped them, so the tree did not come into flower again until the end of April. It receives no treatment, neither pruning nor manuring, and is practically on its own roots now, as the stem rooted into a little bank thrown up just above the ground level. No one knows its age, but the tree was probably planted forty or more years ago."

Public Gift by Sir Jeremiah Colman, Bt.—In order to preserve the amenities of Reigate Hill and in commemoration of the jubilee of the inauguration of the Reigate Corporation in 1863, Sir Jeremiah Colman has purchased about 16 acres, comprising the summit, steep sides and lower slopes of that portion of the north Downs that overlooks Reigate, and has dedicated it to the public use. Those who are familiar with this beautiful Surrey town will know that the scenery of Reigate Hill, with the famous suspension bridge that crosses the London and Brighton main road, is unrivalled anywhere so near to London. The scenic character is to be preserved under very strict conditions, enacted both by the vendor, Lord Monson, and the purchaser. A plan has been drawn up by Mr. Edward White, of Messrs. Milner, Son, and White, and paths have been laid out which will be rigidly adhered to. The borough of Reigate intends to hold a dedication function declaring the hill a public place, and it may be hoped that advantage will be taken of that auspicious occasion to recognise the public spirit that has prompted Sir Jeremiah Colman to make this munificent gift.

Whiteley Park.—On the 21st ult. the Lord Bishop of London laid the foundation stone of the memorial to the late Mr. William Whiteley, at Whiteley Park, where cottage homes are being built for over 200 aged poor. In the days of King Henry VII. Whiteley Park, which is situated near Weybridge, is said to have been part of Hampton Court Forest, and it is on this pleasantly wooded estate of over 200 acres, which the trustees have bought with the munificent legacy of the late Mr. Whiteley, that the homes are in course of erection. Planned by the leading architects of the day, it is intended to make Whiteley Park the finest example of garden city planning extant.

The Lesser Narcissus Fly.—The correspondence on the subject of the Lesser Narcissus Fly has fulfilled the useful function of putting the various investigators in full and even detailed possession of one another's views. We may take it that the tenacity with which these views are held, and the emphasis with which they have sometimes been expressed, are indices of the industry and persistency with which the holders will pursue experimental investigations on this subject. If so we may hope that a year or so hence the precise rôles of Merodon and Eumerus may have been determined, and that the subject may pass from the warm regions of controversy into the cool domain of scientific certainty. In closing the correspondence we take the opportunity of assuring Mr. St. Ox that his competence to speak on this subject is not challenged seriously by anyone who knows the amount of time and ingenuity which he has devoted to the subject, particularly to the extremely practical aspect of it—namely, the catching and hatching of Merodon. We understand that coloured and black-and-white drawings made by our correspondent will appear shortly in the *Daffodil Annual.*

Hops, Fruit and Potatos in the United States.—The Department of Agriculture gives the condition (expressed as a percentage of the ten-year average) of Apples in the United States on July 1 as 108.1, of Pears as 110.0, of Hops as 103.2, and of Potatos as 94.3. The average price received by growers on July 1 for Potatos was about 3s. 5d. per bushel, and for Apples on June 15 about 5s. 8d. per bushel, prices for both commodities being somewhat higher than usual. The area under Potatos on July 1 was estimated at 3,708,000 acres.

Birmingham and Midland Union of Horticultural Societies.—Mr. Carradine has resigned the post of Hon. Secretary of the Birmingham and Midland Union of Horticultural Societies, and Mr. T. E. Aston has been appointed in his stead. The new secretary's address is 25, Grosvenor Road, Handsworth.

Humorous Verse by an Amateur Gardener.—Mr. Druery's large circle of friends will be interested to learn that he has given yet another indication of the versatility which is so characteristic of him. In his more mature years he has returned to what we understand was a very delightful and successful avocation of his earlier years, the writing of verse. His latest volume is entitled *The Pig's Tale and Other Recitations.**

Mr. H. Markham.—The many friends of Mr. H. Markham, gardener at Wrotham Park, Barnet, will regret to hear of the bereavement he has sustained in the death of his wife, which occurred on the 25th ult.

Visit to Messrs. J. Cheal and Sons.—On the 24th ult., a few friends visited the nurseries of Messrs. J. Cheal and Sons, near Crawley, Sussex, with a view to inspecting the various additions and alterations that have been carried out there. The area has been increased by 15 acres, making a total of 125 acres, cropped exclusively with nursery stock. Amongst the new features inspected was a small old English garden, with paved courts, pergola and sundial, also a rockery and bog garden. As the firm does a large landscape gardening business, type gardens such as the English garden and others may have considerable value to visitors at the nurseries, who intend making additions to their own establishments. In the houses the principal features included a first-rate strain of tuberous-rooted Begonias, and pot fruit trees bearing ripe fruit. Messrs. Cheal are well known for their cultivation of Dahlias, and the appearance of the plants this season is proof that exhibitors will again have to reckon with flowers from Crawley. It was too early to find the plants in full bloom, but the early flowers were appearing on the single, the Collerette, the Paeony-flowered, and other types, and the plants were spreading out in their first effort to cover the liberal amount of space allowed each specimen in the plantations. As no appreciable rain had fallen at Crawley for a period of eight weeks, the Dahlias, and, indeed, the fruit and other trees, have made less growth than usual at this date, but what has been made will doubtless be "stocky," and therefore of high value. The nurseries contain countless fruit trees, including three or four acres of well-trained espaliers. So many as 20,000 cuttings are inserted each year for the provision of stocks for the grafting of Apples, in addition to an immense number of Crab stocks raised from seeds. Pears, Plums, Peaches, Nectarines, Cherries, and the small fruits, such as Gooseberries and Currants, were seen in thousands of well-grown plants, and it was noticed that the ground about them was well tilled with the Planet, Junr., cultivator, and free from weeds. A walk through the many acres devoted to ornamental trees and shrubs took some time, and it was not possible to stay long to admire particular specimens, but it may be said that Messrs. Cheal's collection contains not only the most popular species, but the best varieties. Roses are grown in large numbers, and the budding delayed by the dry weather was in full progress. Many of the Pillar Roses were in full bloom, and the following varieties provoked much admiration:—François Jouraville, double, pink; White Dorothy, which appeared more free even than usual; and Evangeline, with single flowers like glorified Dog Roses, and very fragrant. The examples of the topiary art were perfectly startling, few of the visitors being prepared for such a large and varied collection of wonderfully well-trained specimens.

---

* *The Pig's Tale and Other Recitations.* By Chas. T. Druery. (Elliot Stock, 7, Paternoster Row, London.) 6s. net.

An Austrian Expedition to China.—We have received the following letter from Mr. Camillo Karl Schneider, secretary of the Austrian Dendrological Society : "I am sending you a few particulars, which may interest your readers, of an expedition in which I am engaged, in company with Dr. Handel-Mazzetti, to Western China. The journey, which has for its object botanical and horticultural research, is organised by the Dendrological Society of Austria-Hungary. We arrived at Yunnan-fu, the capital of the province of Yunnan, on February 3, and left for the Yangtze on March 5. We avoided the main road and took a less frequented one (not that followed by Major Davies, which we crossed at San-ying-pan). We had some very cold days, sometimes with 3° of frost, but when we finally reached the Yangtze the temperature was high. The flora of the Yangtze banks is not identical with that of the mountains, and we made a good collection of flowering trees, shrubs, and herbaceous plants, though the time of year was not very favourable. We crossed the Yangtze by a different ferry from that used by Davies, and, passing by Tung-an-chou, we reached Hui-li-chou at the end of March. From here we made a short excursion to the Lung tschu shan (3,700 metres high), where we found some small forests of Cunninghamia at a height of between 2,400 and 2,900 m. At the top of the mountain was a dense jungle of small-leaved Bamboos, growing with evergreen Oaks and Rhododendrons. Of the latter genus there were some species in flower; but the richest genus we found was Primula, of which we have already collected about sixteen fine species. From Hui-li we went on to Techang on the main road, only leaving it to see the coal mines near Yimen. From Techang we ascended the Han-tse-rei (3,200 m.) in the west, and had our first glimpse of the valley of the Yalung river. On April 9 we arrived at Ning-yuan-fu, where we met with a very hospitable reception from the French and American missionaries stationed there. The natives were also very kind, and the Chinese prefect lent us a small house, which we were glad to make our headquarters for four weeks. Ning-yuan-fu is beautifully situated on the shores of a picturesque lake, flanked by high mountains to the south and east. We climbed the Lo-tieh-shan (4,260 m.), where we found Tsuga, and visited the independent tribe known as the Lolo, whose territory lies on the mountains of the Ta-liang-shan. We saw the remains of fine forests of Abies, Picea, Tsuga, and many deciduous trees. On May 5 we left the Chien-chang valley and travelled westward to the Yalung river, which we crossed on the 11th. We made a short stay at Yen-yuan-hsien, the capital of the Chin-chiang or Yalung, which is celebrated for its salt mines; paid a visit to the Moso-Tussu at Kua-pieh. and reached the Yalung a second time at Hui-li on May 26. Here we visited the gold mines, and then climbed up to the Tibetan forests at Eitzetes, ascending northward to a height of 4,500 m. We then returned to Yen-yuan-hsien, having collected about 1,500 specimens of dried plants and 250 packets of seeds. The seeds I sent to the gardens of the Dendrological Society at Pruhonitz, Austria, the residence of the President, Count Silva Tarouca. Dr. Handel Mazzetti was chiefly concerned with the rich cryptogamic flora, which is his speciality. We are now (June 4) at Yen-yuan-hsien, but intend shortly to proceed to Yung-Ning and Literang-fu."

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

The Hot-water System.—Now is the best time of the year to put the boilers and water-pipes in thorough order, for they should be overhauled at least once a year. Leaky joints should be made watertight, valves put in working order, the flues and chimneys swept, and new fire-bars fitted if necessary. The weather is never more favourable for doing this work than towards the end of July. Where new structures are being erected, ample piping should be provided, for it will then be an easy matter to maintain the requisite temperatures without making one part of the house unduly hot, a fault generally found in the older structures.

The Cool House.—Take the opportunity the fine weather affords to wash the interior of the Odontoglossum and other cool houses, at the same time cleansing the pots and staging, so that all may be in readiness for the general repotting of the plants, which will require to be done in a few weeks' time. I find it desirable to renew all moisture-retaining substances annually in these houses. Coke and materials of a like nature harbour slugs and snails, and if not removed should be well scalded with boiling water to destroy pests and their eggs. In rearranging the plants, place those that do not require repotting by themselves, as this will save the trouble of removing them a second time. The outsides of the houses may be cleansed later when the permanent shadings are no longer necessary. A supply of Sphagnum-moss should be secured as soon as possible, carefully picked apart, and washed thoroughly, which will help to free it from slugs and insect pests. Care should be taken to use only the thick kind, which is not so quick growing, and keeps compact. The long, narrow kind quickly outgrows its proportions, and seldom lasts the season through. Peat should have the greater portion of the finer particles shaken out, securing as much as possible the fibrous roots. Good peat is difficult to obtain, but I prefer it to Osmunda or Polypodium fibre. A1 fibre is very suitable intermixed with peat, in about equal proportions, and as the latter is difficult to procure it makes a good substitute. A1 fibre should be chopped fine and intermixed with plenty of coarse sand.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Pinks.—The flowering of these plants is now almost over, and it is a suitable time to propagate them. Take up the old plants, pull them to pieces, and replant the portions, each with a few roots attached, in the reserve garden or in their permanent quarters, such as by the edges of borders. Afford a little shade by inserting small sprays of evergreens amongst them and damp the foliage overhead in dry weather. In the case of extra-choice varieties, layering may be practised or cuttings may be rooted under a bell glass.

Carnations.—The plants need constant attention just now in such work as tying the shoots and removing dead flowers. Wire stakes twisted spirally are very useful for training Carnations and their use economises the labour. It is a simple and easy matter to twist the stalks around the wires, and the stakes can be made by the staff in the winter when the weather is too bad for work out of doors. Mark specially good varieties and new ones of which the stock is limited, with a view to layering the plants as soon as they pass out of bloom. In layering, first remove some of the top soil round and about the collars of the plants, replacing it with road grit or light sandy soil, but be careful that the road sweepings are free from tar or creosote, both of which are destructive to vegetation. Road grit containing tar should be placed in a heap and allowed to remain for twelve months before it is used, turning it occasionally in the meantime. Beds of tree Carnations of the varieties Britannia, Lady Hermione, May Day, Enchantress, Mrs. Lawson, Lady Bountiful and Mikado, formed of plants rooted last autumn and planted out of pots in the spring, have done well this season, and promise to provide a long succession of flowers.

Roses.—Climbing varieties trained on pergolas, etc., having finished flowering, should be well thinned of the old flowering branches and weakly shoots. The strong, basal growths of the current year, which will flower next season, should be trained in position and exposed to sunlight and air. Climbers on walls should be treated similarly. The petals of full-blown Roses are useful for the making of pot-pourri; they should be gathered when perfectly dry, laid out thinly on clean sheets of paper in a dry, shady room, and turned occasionally. Examine the petals closely for the presence of Rose maggots, which would soon spoil them.

Hardy Plants.—Large numbers of small-growing plants suitable for the rockery and other hardy flowers can be propagated quite easily at this time of the year from cuttings rooted in a cold frame exposed to full sunshine. Insert the cuttings in little groups or rows in a thick layer of silver-sand. Keep the frame closed, but do not shade the glass at any period of the day. Instead, syringe the frame occasionally according to the amount of sunshine. The dwarf-growing Campanulas, Androsaces, Arenarias, Helianthemums or Rock Roses, all the members of the Cistus family, dwarf Phloxes, Lithospermums, and many other kinds may be increased in this manner.

Shrubby Species.—The shrubby Hypericums are at their most beautiful stage and many of the species, including H. multiflorum, H. patulum, H. Moserianum, H. inodorum and H. Kalmianum, have deliciously-scented flowers. Olearia Haastii and Veronica salicifolia are both grandly in bloom.

Seed-Gathering.—Many hardy herbaceous plants and those suitable for the wild garden may be raised from home-saved seeds. Gather the capsules when they are ripe, selecting them from plants with the best-coloured flowers and the best habit of growth. Anchusas and Verbascums are both ripening their pods now.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Chrysanthemums.—All Chrysanthemums should now be in their summer quarters, and in the pots in which they will flower. The ground on which the plants are stood should be covered with a layer of ashes of a depth sufficient to make it worm-proof. When the plants are arranged along the sides of paths, a piece of slate should be placed under each pot. It is essential to have the shoots of Chrysanthemums ripened thoroughly. Therefore the plants must be exposed to full sunshine; at the same time they must be sheltered from high winds, which are usually prevalent in September and October. Secure the shoots to stakes in good time, and attend to this work frequently. Drive strong posts into the ground at each end of the rows of plants, and attach a wire to the top of each post for securing the stakes thereto. Watering is an important cultural detail, for, while the plants need plenty of moisture at the roots in hot weather, the soil must not be allowed to become sour from an excess. It is not advisable to feed the plants until the pots are filled with roots, and even then only very weak manure water should be used until the flower buds are set. The time for "taking" the buds depends upon the district, whether early or late; in northern counties and in Scotland it is best done during the first week in August, but in southern counties it should be done a few days later. When grown for exhibition three blooms on each plant are sufficient, but the most useful plants for decoration are those with four to six blooms. Pinch off all unnecessary shoots. Bush plants may be allowed to develop all their shoots, and disbudding should be practised in accordance with the variety and the kind of blooms required. Guard against injury by earwigs, which attack the flower buds as soon as they form. Traps may be made of small pots half filled with moss, or crumpled paper, in which the pests will hide during the day. A good specific for rust disease is made by mixing one ounce of petroleum in one gallon of water. Keep the water well stirred and syringe the foliage with the mixture in the evening. Keep the pots and ground clear of weeds.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Gooseberries.—Gooseberries travel best packed in shallow boxes or punnets, and should be gathered a trifle under-ripe. The stalks should be present on the berries, or the latter will become damp in the package and the flavour impaired. The fruiting season may be prolonged by planting late varieties on a border facing north, or training them on north walls. Such varieties as Red Warrington are suitable for late cropping. The nets used for protecting the berries from birds should be removed as soon as the fruits are gathered, so that they may be dried, and stored for use another season. If the bushes are infested with red spider spray them with an insecticide, and thoroughly cleanse them. The ground above the bushes will need hoeing after the constant treading in picking the fruit.

Figs.—The trees are in full growth, and it is important that the shoots be thinned down to a moderate number, reserving only sufficient to thinly furnish the wall space. Fruits covered by the leaves should be exposed to the sunshine, for the flavour is inferior when they are hidden by the foliage. Old-established trees bearing large crops should be dressed occasionally with chemical fertiliser and watered with liquid manure. The trees need plenty of water in hot, dry weather. Do not manure young trees, for they always have a tendency to make rank growth, which, being soft and sappy, is easily injured by frost. Short-jointed, well-ripened shoots are seldom damaged in winter, and they fruit freely.

Raspberries.—As soon as the berries are all picked, cut out the old fruiting canes and burn them. The young rods will receive more sunshine and air, and are more likely to be well ripened in consequence. There is no advantage in having a large number of young canes, and those not required should be removed at the same time as the old ones. Hoe between the rows and make the ground quite clear of weeds and rubbish.

Autumn-fruiting Raspberries.—Last year late-fruiting Raspberries were a great success, and the berries were much appreciated, for they provided an agreeable change in the dessert. If the canes were cut down as advised in the early spring, many young shoots have doubtless sprung from the root stock, and if the work has not been done already these should be thinned to a moderate number to each stool. Canes that are crowded become weakened, and eventually lose their lower leaves. During hot, dry weather water the roots copiously, and apply a mulch afterwards.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

The Vinery.—Early Vines should be afforded every encouragement to ripen their wood, admitting an abundance of fresh air and affording a little artificial heat when the weather is cold and dull. This treatment will not only cause the wood to mature, but discourage the Vines from making fresh lateral growth. It is essential to get early Vines to mature as soon as possible in order that they may have a long season of rest. Vineries in which the fruits are ripening should be ventilated freely, for it is essential to promote a free circulation of warm air. Muscat varieties must be grown in a very warm temperature for the berries to finish well. Ripe bunches of any variety of Grape should always be examined frequently and any berries showing the slightest sign of shanking or mould removed at once. Examine the borders carefully as to their condition of moisture and guard against attacks of red spider. It is good practice to spread flowers of sulphur over Vines from which the fruit has been gathered, for the sulphur will not only keep red spider in check, but also prevent mildew that is liable to appear in houses built in low-lying or damp situations.

Cucumbers.—The present time is suitable to prepare for the winter crop. The house should be cleansed thoroughly, white-washed and the hot-water pipes and valves put in working order. The soil should be arranged on a stage over the hot water-pipes, which will supply bottom heat; but the stage should be at a suitable distance away from the pipes to allow the heat to rise freely and warm the soil thoroughly. Cucumbers in winter only require soil of a medium quality, and it should be rather under than above the medium, for feeding can be resorted to when the plants are ready to make use of extra food, applied either as top-dressings or liquid stimulants. Sow seeds at once of some medium-sized, prolific-fruiting variety, such as Market Favorite, which is better for winter cropping than longer-fruiting varieties. Have the plants ready to transplant in the beds by the end of August or the first week in September, the object being to have them in bearing by the end of October.

Melons.—Plants growing in frames should be afforded every encouragement to enable them to swell their fruits rapidly. They may be fed with weak liquid manure or a concentrated fertiliser, and this treatment may be continued until the fruits show signs of ripening, when clear water only should be applied. Remove all lateral and other superfluous growths as they appear, keep the fruits fully exposed to the sunlight, and discontinue syringing overhead when the fruits are ripening. Admit plenty of air on hot, sunny days, but close the ventilators sufficiently early in the afternoon to husband a little sun heat for the night.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Cauliflowers.—Stir the ground on the Cauliflower beds at frequent intervals and draw some of the soil to the stems of the plants as they become large enough to permit of this being done. This will not only have a beneficial effect upon growth, but in fertile soils such as these plants require, and in which they grow very tall and "heady," it will assist in steadying the plants during times of high winds and heavy rains, which may be expected as the autumn advances.

Parsley.—Plants raised from seed sown last spring have not grown so well as usual, as the season has been unfavourable. At the same time it may be advisable to cut over a portion of the crop with a view to obtaining fresh leafage, which will better stand the winter than the present foliage.

Coleworts and other Greens.—Continue to plant winter greens as soon as more ground becomes vacant. None need be set closer than 1 foot apart. If the ground needs enriching, use superphosphate of lime, and a little later on a pinch of nitrate of soda to each plant. This will ensure a free growth, provided the surface soil is kept stirred—a very important detail. A sowing of Cabbage seed may be made according to the locality, whether early or late; Cabbages should be kept perfectly free from weeds, as it is essential that the plants make a rapid growth at this season.

Celery.—Sufficient plants should be earthed up to furnish early heads; the soil should not be placed higher up the stems than 1 foot, for the plants are still growing, and it is necessary, therefore, not to cover up the green leaves. It is unnecessary to spend a lot of time in making a smart finish to the trenches, for they will not remain very long before the heads are dug. Later batches should have a little soil applied to the surface, which will act as a stimulus to growth.

HOME CORRESPONDENCE.

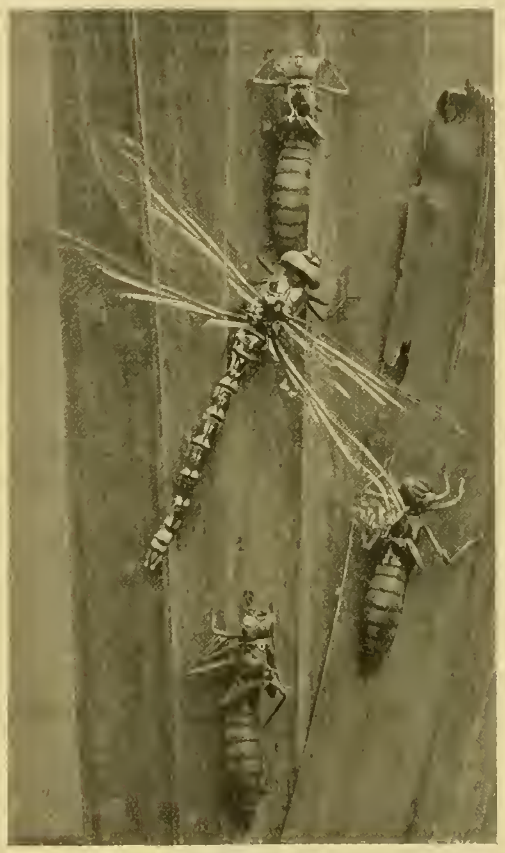
The Dragon Fly (see figs. 40, 41).—Most people are familiar with the flashing colour of the dragon fly as it skims like an arrow over some pool, or hawks along a hedgerow. The interest in these swift and brilliantly-tinted insects is immensely extended if we possess a water garden—however small—wherein the nymph (or pupa) can develop, and in its season cast its mud-coloured coat and come forth beneath our astonished gaze, the dainty and sparkling fly we so often see. In my own tiny pool, with its floating Nymphaea leaves and sword-like Iris growths, the species of dragon fly known as Æshna cyanea makes itself at home—and during the summer and early autumn I frequently see it flashing like a meteor about my garden, its gauze-like wings making a curious swishing sound as they rapidly beat the air. This fly hovers over the water, and then darts rapidly down to the surface of the pool—usually at its margin—and there deposits an egg. Many times have I afterwards found these curious oval, cylindrical, cream-coloured eggs. Subsequently, when the eggs hatch, the young grub takes to the water and lives principally at the bottom. After casting its skin several times—as the growing body demands a larger coat—the grub gradually approaches in appearance the mature insect, though with only rudimentary wing cases. One very curious feature of the nymph is the "mask"—a double-jointed attachment to the under lip, which, when at rest, is folded back upon itself. When hunting, however, the grub stealthily crawls along the mud, and when within striking distance of some dainty morsel in the shape of a little worm or kindred subject, it projects with lightning-like speed the mask, which, being provided at its tip with strong forceps, securely holds its prey and brings it within reach of its still more powerful jaws. Usually during early July the mature nymphs are seized with an impulse to leave their watery home, and if the growths rising from the pool are carefully watched, several of these curious creatures may be observed. For convenience sake it is policy to cut such a growth when the nymph has become settled in its final position; as it is a slow-moving creature at this time of its existence—fastens itself securely into the support, and does not usually travel far from the surface of the water—there is no difficulty attendant upon this removal. This Iris spathe may be placed in a jar of water and watched with some attention. Usually within the hour the skin on the back of the thorax splits, and twenty seconds later the head of the dragon fly appears—after a few moments' rest—to recover from its unwonted exercise, the fly gives a wriggle, and the skin still further splits, when the thorax also emerges. As the nymph seems always to come to rest with its head uppermost, and upon some vertical support, the whole body of the fly appears at this stage liable to fall backwards with a jerk, but upon close inspection a fine white thread is found to encircle it (much as the rope is employed round the waist of a man working at the top of a telegraph pole), and this thread is liberated by some means, little at a time, and supports the upper part of the fly in an astonishing manner. When the thread has expanded to its fullest extent the upper part of the body of the fly is bent back, so that its head is pointing directly downwards. In this position the fly remains motionless for some little time, perhaps 15 or 20 minutes. Then with a preliminary tremor it suddenly jerks itself upwards, and clutches the thorax of the old nymph case; after a further rest of 20 seconds the long, thin body is withdrawn, the fly using its purchase upon the old husk as a means of releasing itself. The fly then hangs from its leg hold, in a perpendicular manner, and the tiny immature wings begin to develop. In the species now described these wings are upon emergence ⅜ inch long, and the amazing spectacle is afforded us of the full development of these organs into the large gauze-like planes within the period of 20 minutes. So rapidly do they expand—there is no actual folding, only a drawing out as of closely compressed netting—that within 15 minutes they are as long as the body, which at this stage is only a little longer than the body of the nymph case. Upon emergence the wings have a curious granular, opaque appearance similar to pale greenish-white crêpe. As they expand they assume a most beautiful pearly iridescence, which again gives place to the final transparency which is one of the chief features of the dragon fly's wings. When full grown the wings are gently opened and closed, at first only 1-16th of an inch, as though to get them dry, and finally they are opened in the manner characteristic of the fly, when, after a rest of an hour or two to allow the body and wings to harden, the perfect insect soars away to wage incessant warfare with gnats and other suitable prey. Fig. 40 shows foliage of my water Iris, and upon it are securely fastened (by means of the curved hooks at the ends of the feet) three pupa cases from which the flies have emerged. The top and bottom cases show clearly the white filament which gradually lowers the fly's body into the inverted position, while the perfect insect is seen drying its wings near by. In the ordinary way the fly remains upon the thorax of the pupa case until the drying is complete, but, probably due to slight movement of the Iris while I was photographing it, it changed its position slightly during the latter stages. The colouring of the species when mature is greenish-blue with bright yellow markings; in the very young stage it is yellower in all its parts. The smaller photograph taken of another emergence indicates the typical hanging position taken up by the fly directly it has "recovered" from the inverted attitude, and shows the hold it takes in the thorax of the pupa case. It also illustrates the beautiful opalescent appearance of the almost developed wings, from which the wrinkled character has not yet disappeared. It will be noticed how the body of the fly is curved to protect the expanding wings, whose varying outline it follows in a very remarkable manner. *R. A. Malby.*

Hoxton Market Christian Mission and Ragged School.—Country Holidays.—Permit me to remind your readers of their past kind support of the poor here, and to express the hope that they will again help us. The summer is upon us, and I beg them to think of and take compassion upon the poor little children living in these Hoxton slums. We are anxious to secure them at least some sunshine to break the incessant gloom. A bright day in the fields, better still, a week by the sea—anything—anywhere from the little room, narrow street, and the gutter. The smallest gifts will be most thankfully received by John Burtt, Superintendent, and Lewis H. Burtt, Secretary, Hoxton Market, London, N.

Germination of Seeds in the Fruit (see p. 58).—Mr. Robinson's note seems to call for two observations. Such germination has also been observed in the genus Phyllocactus, plants which grow naturally under diametrically opposite conditions to those in which Cereus lividus lives, and where there can be no lack of sufficient moisture for the germination of the seeds. In both cases it seems more probable that the phenomenon is the result of some unnatural surroundings delaying the decay of the fruit, and thus preventing the distribution of the seeds in due time. Further, the plant referred to is, I presume, Cereus Jamacaru, of which C. lividus Pfeiff is a synonym. *R. A. Todd.*

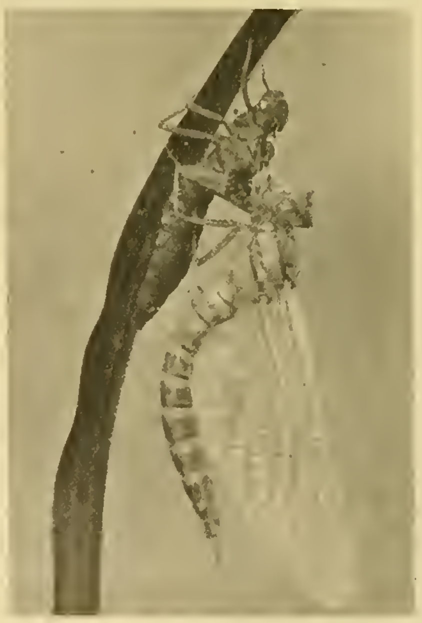
Awards for Fruit Packing.—At their meeting on the 14th inst. the President and Council of the R.H.S. made the following awards in the Fruit-packing Competition:—Silver Knightian Medal to the Swanley Horticultural College; Silver Banksian Medal to Mr. C. A. Streeten. The Council desired this competition to obtain a really good and useful lesson in the packing of soft fruits, so as to enable them to be sent by post or by passenger train, and to arrive in a condition suitable for a gentleman's table. A further similar competition will be held on September 29, full particulars of which can be obtained from the Secretary, R.H.S., Vincent Square, S.W. *W. Wilks, Secretary.*

London Gardens Guild.—May I invoke the help of your readers in my endeavour to extend the gardening movement amongst the working classes of London? Through the kindly initiative of Mr. Noel Buxton, M.P., the Browning Settlement has established the London Gardens Guild, the aim of which is "to promote the planting and tending of gardens in the working-class districts of London; to encourage existing garden competitions and flower shows; to develop such contests where there are none; to aim at every available patch of ground attached to private dwelling or place of business being planted with trees, shrubs, or flowering plants." I should be glad to receive information as to any garden competitions or flower shows known to your readers within the county of London, and to receive any suggestions as to centres likely to promote the cultivation of gardens in the working-class districts. *Arthur R. Athey.*



[Photograph by R. A. Malby.

Fig. 40.—Dragon fly, Aeshna cyanea, and pupae on Iris leaves.



[Photograph by R. A. Malby.

Fig. 41.—Dragon fly just emerged from the pupa with wings developing.

SOCIETIES.

ROYAL HORTICULTURAL.

July 28.—There is rarely a large attendance at the summer meetings, and the one held on Tuesday last in the Vincent Square Hall was no exception to the rule. The second summer show of the National Gladiolus Society, which was held in conjunction with the R.H.S. Show, resulted in Gladioli being the chief floral feature. Herbaceous Phloxes were again shown in great excellence, and there were many other border flowers.

Orchids were fewer than usual. The Orchid Committee recommended 4 Awards of Merit to novelties and 2 Medals to collections. The Floral Committee recommended 3 Awards of Merit and 13 Medals.

The Fruit and Vegetable Committee awarded a Gold Hogg Memorial Medal for a magnificent group of pot fruits shown by Messrs. James Veitch and Sons.

At the 3 o'clock meeting in the Lecture Room Canon Horsley delivered a lecture on "Swiss and Alpine Flora."

Floral Committee.

Present: H. B. May, Esq., in the chair, Messrs. Chas. T. Druery, John Green, J. W. Moorman, Wm. Howe, J. F. McLeod, Chas. Dixon, J. T. Bennett-Poë, Chas. E. Shea, Chas. E. Pearson, W. P. Thomson, W. G. Baker, E. H. Jenkins, Arthur Turner, John Jennings, T. Stevenson, James Hudson, F. W. Harvey, R. C. Notcutt and E. A. Bowles.

AWARDS OF MERIT.

Petunia Purple King.—This is a good double variety, with flowers of a deep blue-purple. Shown by Mr. A. E. Billinghurst, Broadway, Croydon.

Erica vagans St. Keverne.—A charming form of the Cornish Heath, with soft, but bright, pink bells, from which the small chocolate-coloured anthers are exserted. The type grown under the same conditions was not shown for comparison, but the habit of the new plant appeared to be dwarfer and more spreading, and the flower trusses were broader and fuller. Although differing in colour from the common English variety, St. Keverne is practically identical with that figured in Reichenbach's *Ic. Fl. Ger.* xvii. t. 1,164. Shown by Mr. P. D. Williams, St. Keverne.

Carnation Mrs. F. G. Bealing.—This delightful salmon-pink variety was entered as a border Carnation, but was said to have a perpetual - flowering habit. Its extraordinary freedom and vigour were shown by the lifted plants exhibited which had been planted in the open in the spring of 1913 and were now carrying as many as nineteen flowering stems. The stems, each from 2-2½ feet high, are wiry, holding the flowers erect; the calyx is good; the form of the flower is neat and full, the petal edge being very slightly fringed; and the blooms are fragrant. Many of these points suggest the influence of a Perpetual-flowering variety, and it is interesting to note that the plant is said to have been raised from Royalty crossed with an unnamed border variety. Indeed, it might equally well be described as a Perpetual-flowering variety, and we understand that all the plants shown had been propagated from cuttings. Shown by Mr. F. G. Bealing, Bassett.

Other Novelties.

Miss Willmott showed an interesting batch of Campanula Warley alba, a useful new, late-flowering rock plant. It is the white form of Warley, having the same trailing habit and open, semi-double cups.

GENERAL EXHIBITS.

Messrs. H. B. May and Sons, Edmonton, exhibited stove and greenhouse Ferns in variety, for which a Silver-gilt Flora Medal was awarded. This well-arranged exhibit of healthy, finely grown plants included the handsome Lastrea patens Mayii, with pale green, finely-cut fronds; Adiantum Veitchii, the young fronds more coloured than we have seen them before; Asplenium marginatum, a selection of gold and silver Gymnogrammes, Davallia tenuifolia Veitchii, Polypodium irioides pendulum grandiceps, a densely-crested variety; and Platycerium Wallichii.

Mr. L. R. Russell, Richmond, filled a large table with Celosia pyramidalis in batches of yellow and amaranth colours, the strain being exceptionally good. (Silver Banksian Medal.)

Mr. James Box, Haywards Heath, filled a large table with Sweet Peas, Gladioli and other hardy flowers. The Sweet Peas were the more numerous, and included fine vases of Nettie Jenkins, Dobbie's Cream, Orange Perfection, Crimson Giant, James Box, Mrs. W. J. Unwin, Edith Taylor and Wenvoe Castle. (Silver-gilt Banksian Medal.)

Messrs. Sutton and Sons, Reading, showed the coloured hybrid Sunflowers popularly known as "Red" Sunflowers. Besides those with the original chestnut-red markings, there were several seedlings showing variation, including Laugley Gem, with pale primrose florets, and a band of rosy-claret; Langley King, rosy-claret coloured self; Langley Pearl, primrose-yellow suffused with claret; and Langley Beauty, pale orange-brown.

Mr. C. Engelmann, Saffron Walden, was awarded a Silver Banksian Medal for an exhibit of Perpetual-flowering Carnations.

Messrs Stuart Low and Co., Bush Hill Park, Enfield, showed a batch of hybrid Streptocarpuses, including some showing a decided advance towards a good blue shade.

Mr. Geo. Prince, Oxford, exhibited his new Rose, Josephine Nicholson, a variety of salmon-pink colour.

Mr. Howard H. Crane, Highgate, exhibited varieties of Violas and Violettas, as at the last meeting. (Bronze Banksian Medal.)

Messrs. Carter Page and Co., London Wall, had also a large exhibit of Violas, with a row of Antirrhinums in variety, and, at the back, vases of Scabious. (Bronze Banksian Medal.)

The Marquis of Ripon, Coombe Court, Kingston Hill (gr. Mr. Smith), showed hardy flowers in great variety, such as Liliums, Hollyhocks, Pentstemons, Mallows, Helenium autumnale and Statices. (Silver-gilt Banksian Medal.)

Mr. Frank Lilley, St. Peters, Guernsey, showed varieties of Sparaxis pulcherrima, Gladioli in variety; Crinum Powellii and its white variety; Bravoa gemmiflora, Montbretias Prometheus and Messidor, the last with lemon-yellow flowers spotted with red. The Sparaxis were staged as a floor group, the long, arching inflorescences bearing pretty bells of shades of rose.

Mr. W. Wells, jun., Merstham, exhibited select varieties of border Phloxes; Rose Queen is new and strikingly good. Caran d'Ache is a splendid Phlox of deep rose colour with a white eye. (Bronze Banksian Medal.)

Messrs. H. J. Jones, Ltd., Hither Green, Lewisham, again contributed a large group of border Phloxes, for which a Silver Flora Medal was awarded.

Hardy border flowers were also exhibited by Mr. G. Reuthe, Keston, Kent; the Guildford Hardy Plant Nursery; A. Ll. Gwillim, Sidcup, together with varieties of tuberous-rooted Begonias (Silver Banksian Medal); Messrs. Pipers, Bayswater; Fred Smith and Co., Woodbridge (Silver Flora Medal); Messrs. T. S. Ware, Ltd., Feltham (Bronze Banksian Medal); Mr. Amos Perry, Enfield (Silver Flora Medal); and Messrs. Reamsbottom and Co., Geashill, Co. Down.

Gladioli.

Messrs. J. Carter and Co., Raynes Park, arranged many spikes of Gladioli in large vases with sprays of Asparagus Sprengeri, making a very attractive display. The varieties so well shown were chiefly of Baron Jos. Hulot, America, Libesfueur, Niagara, and Panama.

Messrs. J. Kelway and Son, Langport, Somerset, showed a splendid collection of Gladioli in the best varieties. Besides a large number of standard sorts and the two which received Awards of Merit, there were magnificent spikes of Lady MacFarren, Mrs. Asquith, John Churchill Craigie, Fire Dragon, Mr. Goring Johnston and Golden Measure.

Messrs. Atkinson and Statter, Southampton, displayed a very fine collection in a dainty manner. These spikes were chiefly shown in dozens of each kind, and made a great show. Golden West, Willy Wigman, Halley, Golden King, Rajah and General Marina are the names of a few of the desirable varieties on show.

Messrs. Vilmorin-Andrieux and Co., Paris, set up a large collection of Primulinus hybrids which fully illustrated the great decorative value of these graceful flowers.

Mr. A. J. Guilbert, Guernsey, showed Halley, Panama, Princeps, Baron Hulot and other desirable Gladioli.

Mr. James Box, Lindfield, Sussex, specialised with such well-known sorts as Halley, Empress of India, America, Electra and Faust, which he showed in large spikes.

Trial of Sundries.

At their meeting on the 28th ult., the President and Council made the following Awards in connection with the trials of horticultural sundries at Wisley :—

Highly Commended.—Messrs. Walter Voss and Co., Ltd., Carlton Works, Millwall, for "Carlton" arsenate of lead spray for caterpillars.

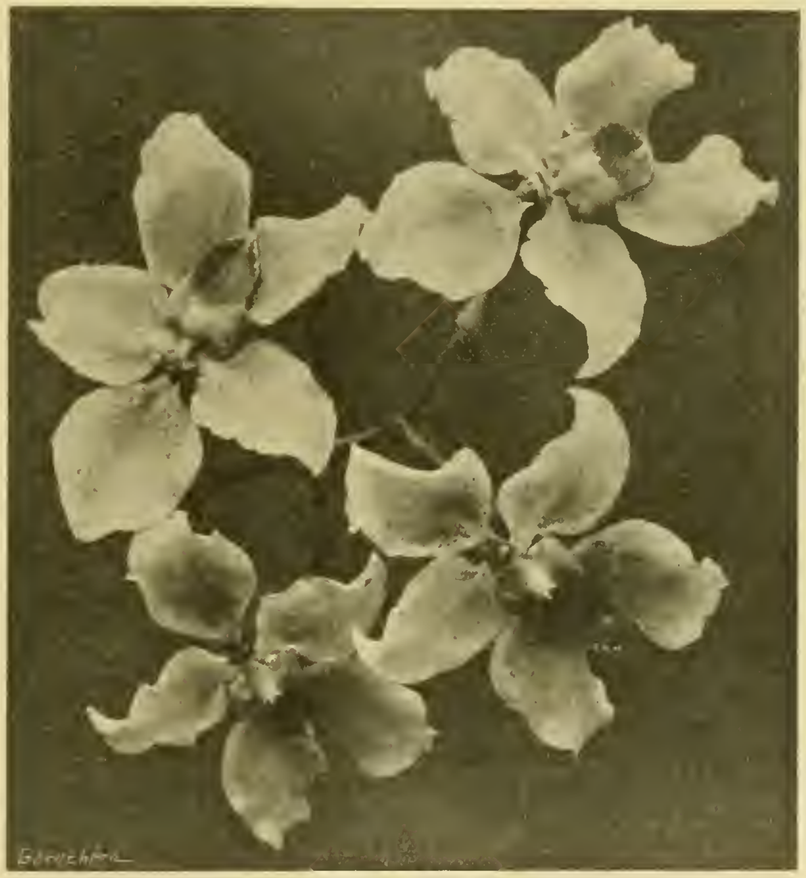


Fig. 42.—oncidium leopoldianum.
(See R.H.S. Orchid Committee's Awards.)

Award of Merit.—Messrs. McDougal Bros., 66, 68, Port Street, Manchester, for Katakilla powder insecticide wash.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, R. G. Thwaites, A. McBean, T. Armstrong, J. E. Shill, W. H. Hatcher, A. Dye, E. H. Davidson, C. H. Curtis, S. W. Flory and Sir Harry J. Veitch.

AWARDS OF MERIT.

were granted for the following novelties :—

Laelio-Cattleya Miss Louisa Fowler (*L.-C. callistoglossa × C. granulosa*), from J. Gurney Fowler, Esq., Brackenhurst, Pembury, Tunbridge Wells (gr. Mr. J. Davis). A stately hybrid, the flowers (of which there were six on the spike) being large and of a pleasing colour, the labellum, with its broadly-expanded front lobe, giving evidence of the influence of C. granulosa in its shape. The sepals and petals are lilac-pink, the front lobe of the lip being purple, with some yellow markings at the base.

Cattleya Hardyana Rubens, from J. Gurney Fowler, Esq. One of the richest in colour of this variable, but beautiful and fragrant, hybrid Cattleya. The rather small plant shown had the ordinary light-rose sepals and petals of the type, but the labellum was of fine proportions, the broad front being ruby-crimson, with a clear yellow blotch on each side at the opening of the tube, and a narrow, lilac-tinted margin.

Oncidium Leopoldianum, from H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day). A most interesting plant and the first of the true species to be shown. It was originally imported by L'Horticulture Internationale, Brussels, and described in *Gardeners' Chronicle*, Nov. 15, 1890, p. 556. On October 24, 1905, Elijah Ashworth, Esq., showed as O. Leopoldianum a species which he had obtained under that name, but which was identified as O. corynephorum. It secured a First-class Certificate, and was illustrated in *Gardeners' Chronicle*, Nov. 11, 1905, p. 340. This led to the supposition that the two species were identical, there being a similarity in colour, an error which is now proved. Later Mr. H. A. Tracy imported O. corynephorum from Peru, and a similar species with it, which did not survive, and this seems to point to the fact that the two grow together. The flowers have a resemblance in some respects, but are widely separated botanically. O. Leopoldianum has the sepals and petals slightly stalked, with ovate-acuminate blades, white freckled with rose. The hastate lip is yellow at the base and light violet in front, the margin being white. The long, twining inflorescence had many short branches of two to six flowers, altogether forty-five blooms, and was named Fairlawn variety.

Cattleya Astron (*Harrisoniana alba × Dusseldorfei Undine*), from Baron Bruno Schroder, The Dell, Englefield Green (gr. Mr. J. E. Shill). A very pretty hybrid, flowering for the first time on a very small plant, but bearing a large, pure white flower with sulphur yellow disc to the lip.

General Exhibits.

His Grace the Duke of Marlborough, Blenheim Palace, Woodstock (gr. Mr. Hunter), showed Vanda coerulea Grace with a spike of thirteen clear blue flowers with violet lip, and Cypripedium Laurebel Blenheim variety.

J. Gurney Fowler, Esq., Brackenhurst, Pembury, sent Laelio-Cattleya Maqueda Brackenhurst variety, a richly coloured flower.

R. G. Thwaites, Esq., Chessington, Streatham, showed a selection of hybrid Orchids, including several of the pretty rose-purple Odontioda Thwaitesii and two others of the same class—Oda. stella (Odm. percultum × C. vulcanica) and Oda. Isis (Odm. Rolfeae × C. vulcanica).

Messrs. Charlesworth and Co., Haywards Heath, were awarded a Silver Flora Medal for a group which included Odontoglossum Rolfeae with a graceful spike having ten branches, each with eight or nine blooms; equally good O. ardentissimum and variety xanthotes; O. coronarium and other Odontoglossums; fine plants of Miltonia vexillaria, and, among other hybrids, the new Brasso-Cattleya Dora (B. cucullata × C. Mossiae Wageneri), a distinct white and fragrant flower.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Flora Medal for an interesting group in which were many rare species, including Bulbophyllum patens, Cirrhopetalum pulchrum, Oncidium Sanderae, Dendrobium sanderae, Coelogyne asperata, Acineta Humboldti, Lycaste Tunstilli punctatum, Brassia Forgetiana and B candata, Masdevallia elephanticeps and other Masdevallias.

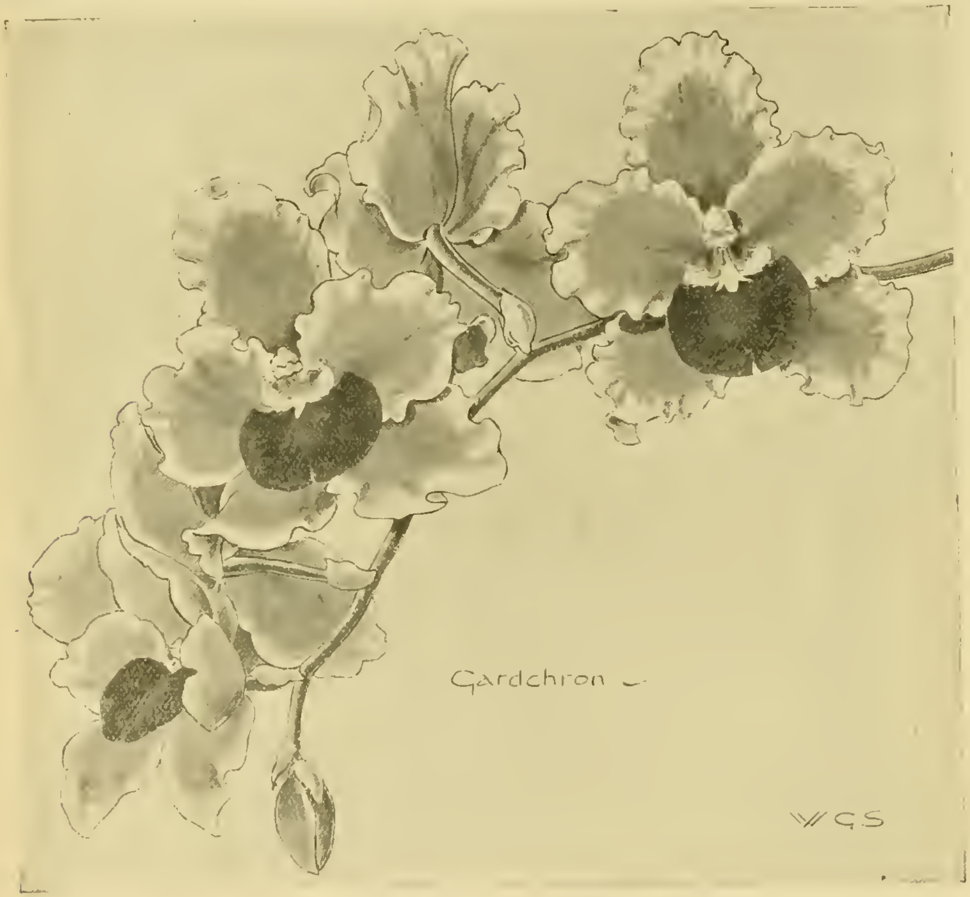


Fig. 45.—ONCIDIUM CORYNEPHORUM : PETALS AND SEPALS LIGHT ROSY-PURPLE EDGED WITH WHITE, LIP DEEP VIOLET COLOUR.

Eustace F. Clark, Esq., Evershot, Dorset, sent a flower of a fine form of Cattleya Warscewiczii Sanderiana, with a slight trace of C. Hardyana, and flowers of two Laelio-Cattleyas.

Mr. C. F. Waters, Balcombe, showed a good rose-coloured Brasso-Cattleya of unrecorded parentage. A large and well-formed flower.

Fruit and Vegetable Committee.

Present : Jos. Cheal, Esq., in the chair, Messrs. W. Bates, E. Beckett, A. Grubb, J. Willard, J. Davis, A. W. Metcalfe, J. Jaques, A. Bullock, G. Wythes, P. C. M. Veitch, John Harrison, C. G. A. Nix, A R. Allan and Geo. Kelf.

Messrs. James Veitch and Sons, Feltham, exhibited pot fruit trees of Peaches, Nectarines, Plums, Pears, Apples and Figs. They were all fruiting magnificently : indeed, we have never seen Plums in pots carrying better crops. At the back were "standard" espaliers of Peregrine and Royal George Peaches and Early Rivers Nectarine. The Plums included Jefferson, Early Transparent, Kirks and Mirabelle, and there were fine bush plants of Violette Hative, Royal George and Peregrine Peaches, Early Rivers Nectarines and Lady Sudeley Apples. (Gold Hogg Memorial Medal.)

Messrs. S. Spooner and Sons, Hounslow, Middlesex, exhibited early varieties of Apples. The finest fruits were Early Victoria, a greenish-yellow, conical-shaped culinary Apple; there were also fruits of Early Red Margaret, Ruddy, Mr. Gladstone, White Transparent and Red Astrachan.

Scientific Committee.

July 14.—*Present :* Mr. E. A. Bowles, M.A. (in the chair), Dr. Keeble, Sir John Llewelyn. Bart., Messrs. H. J. Elwes, C. E. Shea, J. T. Bennett-Poë, J. Fraser, E. M. Holmes, F. J. Chittenden (hon. secretary), and F. Cuthbertson (visitor).

Insects destroying Lettuce.—Mr. Cuthbertson showed specimens in spirit of a caterpillar which occurred in enormous numbers in the fields in California where Lettuce was growing for seed. They had apparently the same habits as the surface caterpillars in this country, and were in such abundance that five to ten acres of plants would be cleared off in a single night. The larvae were not recognisable as British, but belong to the genus Plusia or a nearly allied one. Spraying with Paris Green was resorted to with success, but lead arsenate was used without benefit.

Alstroemeria Hookeri.—Mr. Duncane Godman sent flowers of an Alstroemeria which was introduced some years ago from Chile by Mr. Elwes, but which had not been identified hitherto. The flowers were identical in form and arrangement with those figured in Loddiges' *Botanical Cabinet*, No. 1272, under the name Alstroemeria Hookeri. The plant there figured was stated to be nearly 2 feet in height, but the present one rarely exceeded 1 foot.

Lysionotus Willmottiae.—This species of Lysionotus, shown at the Holland House Show and recommended by the Floral Committee for a Botanical Certificate, was introduced by Mr. E. H. Wilson as Lysionotus sp. No. 370. The plant is a dwarf shrub belonging to the Gesneraceae, and has Pentstemon-like flowers measuring 1¾ inches long and Lilac blue. The leaves are ovate-lanceolate. The award of a Botanical Certificate was confirmed subject to the name being a valid one.

Fruit of Harpagophytum.—Sir J. T. D. Llewelyn showed a fruit of H. procumbens, a native of S. Africa, and known there as the Grapple Plant. He also exhibited a plant of Primula pseudocapitata, and made some remarks upon the change which had followed the cultivation of the plant known to gardens as P. capitata. P. capitata of gardens appears to be perennial if the seeds are removed, though if they be permitted to fruit, the plant dies.

Cladrastis amurensis.—Mr. J. Fraser showed spikes of flowers of this Cladrastis which, although introduced in 1880, is still rare.

Orobanche Hederae.—Mr. E. M. Holmes said that two years ago he cut down an Ivy on the roots of which Orobanche Hederae was growing. This parasite still appeared in the same place, although no part of the aërial portion of the Ivy remained.

Nemesia with fringed flowers.—The Rev. W. Wyley, of Aysgarth, sent specimens of Nemesia to illustrate the following note :—"About the year 1905 the raiser had a bed of Nemesia Suttonii (large flowered), bordered with N. strumosa (?) (dwarf), and hoping to get a strain of blue Suttonii, endeavoured to fertilise white Suttonii with blue Strumosa pollen; but having too little spare time and losing many seedlings through slugs, he mingled the seed of the resultant plants in 1906 with that gathered from N. Suttonii. During the next five years the frequent occurrence of an intermediate type (flower smaller and narrower than N. Suttonii) was noticed, one of which in 1910 had fringed upper petals (flowers white). In 1911 two such specimens occurred (one white, one yellow), which he interpollenised with the dark-coloured N. Suttonii. In 1912 again many seedlings were destroyed, but there appeared three of intermediate fringed type (one white, one yellow) and two of Suttonii type (a little small but more heavily fringed, one crimson, one orange mottled). All these he interpollenised, and in 1913 about ten per cent. were heavily fringed, of various colours, roughly twenty per cent. intermediate type slightly fringed, the rest unfringed. One of the latter bore the first flower on the lateral shoots with abnormally large lip. One fringed variety bore two of its flowers double. This year (so far as the flowers have developed) about fifty per cent. are heavily fringed, about ten per cent. scarcely fringed at all. The flowers exhibited showed a considerable amount of fringing of the upper petals. Mr. Chittenden said that recently a Schizanthus had been sent to him with a remarkable amount of fringing of the petals, and a common Primrose had some years ago come to his notice showing a similar development. These appeared to be instances of the sudden appearance of a new character which may have arisen owing to gametic disturbance through crossing, but they may possibly have been due to some other cause.

Dodder on German Aster.—Mr. C. E. Pearson sent some seedling German Asters thickly covered with a species of Cuscuta, which was unfortunately not flowering, and could therefore be no further identified. The colour of the stem was quite yellow, and very similar to that of the lucerne dodder. It had probably been introduced with foreign seed.

Seedless Pea.—For comparison with the seedless Apples shown at the previous meeting, Mr. Chittenden exhibited a pea pod about 1½ inch in length and fulcate in shape, from the variety "William I.," which contained no seeds and in which the ovules had apparently entirely failed to develop.

Narcissus diseases.—Mr. A. J. Bliss sent bulbs of Narcissus, some attacked by Eumerus, some not, for examination, together with notes. They were referred for examination and report at the next meeting.

Indian Paint Brush.—Mrs. Longstaff sent a photograph of a beautiful species of Castelleya growing in her garden at Wimbledon. The seed was collected by her in the high mountains of British Columbia and sown in 1912. It germinated and was planted out in 1913, flowering this year. The species of this genus are usually apparently difficult of cultivation, for they are semi-parasitic on the roots of other plants in the same way as are the Eyebright, Louseworts and other related plants.

NATIONAL GLADIOLUS.

July 28.—The second summer show of the above Society was held on this date at Vincent Square in conjunction with the fortnightly meeting and exhibition of the Royal Horticultural Society. Taken generally, it was one of the most successful that the Gladiolus Society has held, for, although the competitive exhibits were not exceptionally numerous, the trade exhibits were composed of large numbers of very beautiful spikes of Gladioli. A large number of varieties were placed before the committee, and of these 1 received a First-class Certificate and 6 were given Awards of Merit, all of them of the gandavensis section.

Following their usual custom, the Society did not award the President's Cup, but gave points to each of the two exhibitors, and the competition will be continued at the second exhibition, to be held in a fortnight's time. On this occasion the only competitors were Messrs. de Ruyter and Hogewoning, Noordwijk, Holland, and Mr. Wilhelm Pfitzer, Stuttgart, Militarstrasse, 74, Germany.

The only exhibit of 24 varieties of standard Gladioli was from Mr. K. Velthuys, Hillegon, Holland, but was unfortunately disqualified—"not according to schedule." In the class for 12 varieties of late-flowering Gladioli, Mr. Velthuys was awarded the 1st prize for a beautiful collection, which included Liebensfeuer, Lieger and Baron Jos. Hulot. There was no award in the class for 2 spikes of seedling Gladiolus.

The Primulinus hybrids were not superior to the quality usually seen. The 1st prize was won by Messrs. Vilmorin-Andrieux and Co., Paris; 2nd, Messrs. J. J. Grullemans and Son, Lisse, Holland.

In the amateurs' class, Mr. George Churcher, Woodcote, Alverstoke, was the only exhibitor, but he was awarded the 1st prize for a very creditable set of 6 spikes, of which Zephir, Marie Thérèse and Marie, were excellent.

The groups of Gladiolus in Class 14 were very attractive. The 1st prize was won by Mr. H. Barlow, Clapton, who included good spikes of White Panama, Pink Perfection, Electra, Golden King, and several seedlings. The 2nd prize was awarded to Mr. Wilhelm Pfitzer, Stuttgart, Germany, for a very bright and fresh collection, of which the Primulinus and the yellow gandavensis hybrids were especially good.

Premier Prizes.

First prizes were awarded to the following varieties in their several colours :—

Yellow: Goldfinder. *Pink:* Brooklands. *Scarlet:* Liebensfeuer. *Salmon:* Prince of Wales. All from Messrs. Atkinson and Statter.

White: Duchess of Wellington. Shown by Messrs de Ruyter and Hogewoning.

Blue: Capri (2nd prize, no 1st being awarded). Shown by Mr. W. Pfitzer.

First-class Certificate.

Loveliness.—A large, compact spike of cream yellow flowers, shaded and striped with pink. Some of the flowers shade to rose colour in the centre, when they are very charming. Shown by Messrs. Atkinson and Statter.

Awards of Merit.

Armaganac.—A rather small, but full, spike of vermilion flowers, which are splashed with chocolate; the lower petals have a blotch of pure white. This, and the three following, were shown by Messrs. Atkinson and Statter.

Fire King.—A medium-sized spike in which the deep scarlet flowers are well disposed.

Chicago White.—A very compact spike of creamy-white flowers; the lower petals have a large patch of pale yellow, which is faintly striped with claret.

Marie Thérèse.—A large spike of blush-white flowers, which have a yellow blotch on the lower petals.

Abeliard.—A very large spike of mottled flowers of pale pink ground colour, which is flushed and striped with rose-pink. Shown by Messrs. J. Kelway and Sons.

White Giant.—A magnificent spike of immense flowers measuring 6½ inches across. The ivory white of the flowers is occasionally tinged with pink. Also shown by Messrs. Kelway.

SOUTHAMPTON ROYAL HORTICULTURAL.

July 21-22.—The annual show of the above society was held on the Royal Pier, at Southampton, on the 21st and 22nd ult. Competition in the open trade section was somewhat sparse, but in the amateurs' classes the entries were more numerous. In the classes for American varieties there were some very good blooms; but here, also, the number of competitors was not large.

For 12 vases of self-coloured, fancy, and yellow-ground Picotee Carnations, open to all, Mr. J. Douglas, Edenside, Great Bookham, was awarded the 1st prize. This exhibitor was also 1st in the classes for 4 self-coloured Carnations, 4 vases of Fancy Carnations, for white-ground fancy varieties, for yellow-ground Picotees, for 6 fancy varieties, and for white-ground Picotees, and he also won the 2nd prize in other classes. In the section devoted to dressed Carnations shown on cards, Mr. A. R. Brown, of Wyehall, King's Norton, was very successful, obtaining 1st prizes in the classes for 6 flaked or Bizarre varieties, for self-coloured flowers, and for yellow-ground Picotees, besides winning several 2nd prizes. In the amateurs' classes W. H. Parton, Esq., Studholme, Moseley (gr. Mr. P. G. Budd), won the 1st prize for 6 vases of fancy and yellow-ground Picotees, and also for 4 vases of Picotees. In the single vase classes R. Morton, Esq., Grange Dene, Woodside Park, was placed 1st for any fancy variety with certain exceptions. He was also 1st for 4 vases of self-coloured and fancy blooms, and for one vase of any yellow-ground Picotee. J. A. Fort, Esq., Winchester, took the 1st place for fancy Carnations in 6 varieties. He also won the 1st prize for 6 white-ground Picotees. Among perpetual-flowering varieties, the 1st prize for 5 vases distinct, three blooms of each, was awarded to H. Myers, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood), Sir Randolph Baker, Bart., Ranstone, Dorset (gr. Mr. Usher), being placed 2nd. A special prize for American Tree varieties was offered by Mr. A. F. Dutton, Iver, Bucks, which was secured by Sir Randolph Baker, Mr. Myers being given the 2nd place. Mrs. E. Ladhams, Alresford House, Southampton, won the 1st prize for a decorated dinner-table measuring 6 feet by 4 feet with a pleasing display of pink Carnations, and she was also awarded the 1st prize for an epergne decorated with the same flowers. In the Sweet Pea section Sir Randolph Baker took the 1st prize in three classes, viz., those in which prizes were offered by Messrs. Toogood, Messrs. Sutton and Sons, and Messrs. E. Webb and Sons respectively. Mr. Myers took 1st prize for a collection of fruit in 4 dishes, in which Grapes, Peaches and Melons were well shown. Ellen, Lady Swathling, South Stoneham House (gr. Mr. F. Hall), was awarded the 1st prize for black Grapes and for Nectarines. Mr. Drummond, Cadland Park, Hythe (gr. Mr. Smith), took the 1st prize for Peaches. In the classes for vegetables, Mr. Myers took a number of prizes, excelling in all the four classes in which special prizes were offered by Messrs. Toogood, Sutton, Webb, and Carter respectively, for 6 dishes. Among the trade exhibits that of Mr. H. Burnett, of Guernsey, was remarkably interesting, and well deserved the Gold Medal awarded. He showed first-class specimens of Carnations, Monarch, Lady Allington, and other good varieties. Messrs. B. Ladhams and Son, Shirley, showed herbaceous plants, Violas, Water Lilies, and Roses in an attractive style, and were awarded a Gold Medal. To Messrs. W. H. Rogers and Son, Southampton, a similar award was made, for a well-arranged group of Roses and Phloxes. Mr. E. Wills, Southampton, showed an attractive group of miscellaneous plants, and received the award of a Silver-Gilt Medal; and Mr. M. Prichard, of Christchurch, was awarded a Silver Medal for a well-staged collection of herbaceous and Alpine plants.

CARDIFF HORTICULTURAL.

In our report last week of the exhibition at Cardiff (see p. 82) we omitted to mention that Reginald Cory, Esq., Duffryn (gr. Mr. A. J. Cobb), was awarded a Silver-gilt Medal for a tastefully arranged group of Climbing Roses. In addition to a large number of the Dwarf Polyantha type no fewer than 50 distinct varieties of Wichuraiana were set up in this exhibit. Some of the best climbers noted were Excelsa, Coronation, The Farquhar, Mrs. L. Dewhurst, Kalmia, Eisenach, Newport Fairy, American Pillar, Delight, and Débutante.

WATFORD HORTICULTURAL.

July 22.—The annual summer show of above Society, held at Little Cassiobury, by permission of G. S. Whitfield, Esq., on the 22nd ult., was the largest and finest ever held under canvas in Watford. Upwards of 425 exhibits were staged in 85 classes. The quality of the flowers and produce shown was remarkably good, and competition generally was keen.

The Silver Medal and 1st prize offered for the best competitive exhibit in the show was awarded to Chas. H. Waterlow, Esq., The Kennels, Stanmore (gr. W. R. Phillips), for a group of miscellaneous plants arranged for effect on a space of 100 feet. The Silver Medal offered by Messrs. Dobbie and Co. for the best bunch of Sweet Peas in the show was awarded to W. E. Catesby, Esq. (gr. Mr. W. Webb). Honorary exhibits were staged by Messrs. Chas. H. Waterlow, R. H. Comyns (gr. Mr. W. Waterton), and G. B. Dodwell (gr. Mr. G. Middleton). Hardy Shrubs and Japanese Maples were exhibited by Messrs. H. Newman and Son and Messrs. Lane and Son.

Gold Medals were awarded to Messrs. H. Newman and Son for a Rock and Alpine garden; R. H. Comyns, Esq., for group of miscellaneous plants; Messrs. Gleeson and Co. for floral designs and cut flowers. Mr. W. B. Kettle was awarded a Silver Medal for floral designs and Alpine plants. First-class Certificates of Merit were awarded to Chas. H. Waterlow, Esq., for a group of flower and foliage plants; to Messrs. A. and H. Scrivener for floral designs and cut flowers; to Messrs. Lane and Son for Roses; to Messrs. Thompson and Charman for hardy flowers; and to Messrs. W. Cutbush and Son, Barnet, for Roses.

WOOLTON HORTICULTURAL.

July 22.—The summer exhibition of the above society was held on this date in Woolton Wood Park. The number of entries was equal to the average for these shows, and the quality of the exhibits was good.

There were six exhibits in the class for six stove or greenhouse plants. Lieut.-Col. J. B. Gaskell, Woolton (gr. Mr. J. Stoney), was awarded the 1st prize; 2nd, Mr. J. P. Reynolds, Dove Park, Woolton (gr. Mr. G. Lowe); 3rd, Ald. A. T. Mather, Beechwood, Woolton (gr. Mr. H. Howard).

Mr. J. Barratt excelled in the class for nine vases of Sweet Peas, distinct; 2nd, Mr. J. Stoney. The exhibits in the class for six bunches of hardy herbaceous flowers made an imposing display, Liliums being especially fine. The prize winners were :—1st, Mr. H. Howard; 2nd, Mr. J. Stoney; and 3rd, Mr. G. Haigh. Mr. Stoney showed best in the class for twelve Roses, distinct, whilst Mr. Haigh had the best four vases of Carnations. The 1st prize for a hanging basket was won by W. J. Atkinson, Esq., Hillside, Woolton (gr. Mr. J. Harrison).

For a collection of six distinct kinds of fruit, Sir W. H. Tate, Bart., Highfield, Woolton (gr. Mr. G. Haigh), led a good exhibit, his Peaches, Nectarines, and Figs being excellent; Mr. J. Stoney and Mr. G. Lowe followed, in this order.

For four kinds of hardy fruits, Miss Young, Ashfield, Little Woolton (gr. Mr. W. Macklin), won, followed by the Rt. Hon. Sir H. H. Cozens-Hardy, The Hollies, Woolton (gr. Mr. J. Barrett).

For a collection of vegetables, six distinct kinds, the awards were as follows :—1st, Mr. J. Barrett; 2nd, Mr. J. Stoney; and 3rd, Mr. G. Haigh.

Non-Competitive Exhibits were staged by Messrs. R. P. Ker and Sons, Aigburth (stove and greenhouse plants); Mr. H. Middlehurst. Liverpool (Sweet Peas); Mr. J. Hull, Halewood (Sweet Peas); Messrs. W. Rowlands and Co., Childwall Nurseries, Wavertree (Roses); Mr. R. Manson, Gateacre (Roses); and Messrs. Davies and Co., Wavertree (Gladioli).

FORMBY HORTICULTURAL.

July 15.—This popular show was held as usual in the field adjoining Briers Hey by permission of Mrs. Ernest Bush and Mr. H. E. Wright.

Twenty-two classes were allotted to Roses, and the quantity of the blooms was about the average, but the quality was inferior. For 12 blooms, distinct, Mr. A. E. Gunson won the 1st prize with good blooms of Avoca and Mrs. Hubert Taylor. Mr. Tom Lunt and Mrs. Glynn won the remaining awards in this order. Mr. Gunson was successful in the class for 12 blooms in six varieties, with Mr. E. M. Allen 2nd; for the same number of blooms in four varieties Mr. T. Carlyle won the 1st prize, with Mr. Gunson and Mrs. Glynn 2nd and 3rd respectively.

For growers cultivating fewer than 200 plants Mr. Loo Thomson was in great form, securing four 1st prizes with rather small blooms, but of excellent colour and form; Mr. F. H. Harris won one 1st prize, and Mr. H. Page the remaining 1st prize in this section. In the classes open only to growers who had never won a prize in the former sections Mr. F. Harris and Mr. H. H. Hammer won 1st prizes. Mr. Carlyle won the National Rose Society's Silver Medal with his specimen of Mme. Jules Gravereaux; and Mr. Loo Thomson a similar medal with a bloom of Avoca; Mr. E. A. Quiggan won the special award offered in the Novices' section.

Sweet Peas.—Mr. E. M. Allen won the 1st prize in the class for 12 vases of Sweet Peas, with strong blooms, his best varieties being King White, Sunproof Crimson, Mrs. Hettie Roonie, King Manoel and Thomas Stevenson. For 9 vases Mr. W. Bond showed excellently, the varieties Barbara and Maud Holmes being splendid; Mr. A. E. Storrey and Mr. G. Lunt were also prizewinners in this class. For 6 vases Mr. Harold Aindow and Mr. W. Pearson were placed 1st and 2nd respectively.

The best hardy biennials and hardy perennials were shown by Mr. J. Goulbourne and Mrs. C. G. S. Leggatt, the best double Begonias by Mrs. R. Hobbs, the best single Begonias by Mr. F. Harris, the finest Pansies by Mr. E. M. Allen, the premier Violas by Mr. F. Harris, and the best Carnations by Mr. E. Sergenson.

Non-Competitive Exhibits.—A few trade exhibits were arranged by Messrs. A. Dickson and Sons, Belfast; Mr. H. Middlehurst, Liverpool; Messrs. Woodward and Cuthbert, Liverpool; and Mr. Karl Therkildsen, Southport.

CEMETERY SUPERINTENDENTS' ASSOCIATION.

July 15, 16.—The first annual congress of the United Kingdom Association of Cemetery Superintendents took place on the 15th and 16th ult. at Anderton's Hotel, Fleet Street, London, and proved a great success. There was a large gathering of superintendents from all parts, including Messrs. A. Ashling (Peterborough), T. Bevan (Marylebone), A. J. Blackell (Plymouth), R. J. Brown (Hammersmith), D. Bliss (Swansea), S. T. Burgoyne (Battersea), T. Buckerfield (St. Pancras), W. A. Cochrane (Hampstead), J. Davies (Newcastle-under-Lyme), J. R. Everitt (Norwich), T. Fairbourn (Halifax), A. H. Fletcher (Enfield), W. C. Hards (Greenwich), W. Hand (Cambridge), W. G. Hill (Sheen), A. E. Joyce (Southborough), A. King (Islington), J. King (Erith), F. J. P. Loud (Acton), F. W. Perrin (Bath), F. W. Parkinson (Armley), J. D. Robertson (City of London), G. W. Snow (Wandsworth), J. N. Sharman (Shooters Hill), G. Sabey (Rushden), W. C. Stokes (Great Northern), A. Townsend (Accrington), C. Willis (Shrewsbury), W. Yarwood (Knutsford) and C. F. Tate (Kensington), secretary.

At twelve noon the members motored to Hampstead Cemetery, where they were received by the chairman of the Hampstead Cemetery Committee, and Mr. A. W. Cochrane, the superintendent. This cemetery is some twenty-five acres in extent. They next visited the St. Marylebone Cemetery, which is under the supervision of Mr. T. Bevan, who explained at some length the drainage arrangements of the cemetery, which were considered by the visitors to be perfect.

The delegates were conveyed to the Great Northern Cemetery and were conducted round this beautiful wooded cemetery by Mr. Stokes, the superintendent.

From there they were taken to Islington and St. Pancras Cemeteries, which adjoin, and Mr. Buckerfield and Mr. King provided tea. After tea the visitors were conducted around these extensive grounds (which are some two hundred acres in extent), and found much to interest them, including the large ranges of glasshouses at both cemeteries.

At 7.30 p.m. the delegates and others assembled at Anderton's Hotel. The meeting was opened by the president, who explained the objects of the Association, and urged upon the members present to interest their neighbours in the work of the society.

Mr. T. Bevan then read a paper entitled "The Laying-out, Draining, and Planting of a Cemetery."

The secretary in his report stated that the Association was only formed in October of last year, but 62 members had been enrolled. Six meetings had been held at which various subjects in connection with cemetery matters had been discussed, the chief item being the Deaths Registration and Burials Bill. The members were of the opinion that some reform was necessary in the manner in which death certificates were issued, and there has been forwarded to the promoters of the Bill a copy of suggested amendments.

A paper was then read by Mr. W. A. Cochrane entitled "The Evolution of the London Burial Grounds," which proved very interesting.

The election of officers for 1915 was next proceeded with. Mr. J. D. Robertson was unanimously elected President and Mr. A. King Vice-President. Mr. C. F. Tate was elected secretary. The committee was also appointed.

It was decided to hold next year's congress at Liverpool and Manchester. On the second day the members met at Anderton's Hotel, and proceeded by motor through London to the City of London Cemetery at Ilford. They were met at the gates by the President of the Association, Mr. Robertson, who conducted the party through the grounds.

BRITISH GARDENERS' ASSOCIATION.

ANNUAL GENERAL MEETING.

July 25.—The tenth annual general meeting of the B.G.A. was held in the Thatched House Hotel, Manchester, on Saturday, the 25th ult., Mr. G. W. Butcher presiding. About fifty members were present, including representatives from Dublin, Leamington Spa, Nelson, Sheffield, Blackburn, Leeds, Altrincham, Kew, Bolton, Birmingham, Liverpool, Northampton, Beckenham, Chester, Accrington, Birkenhead, Edgworth, Nantwich, Hampton and London. The Chairman gave a hearty welcome to all members attending the Conference, and congratulated them on the widely representative character of the meeting.

The following letter from the National Association of Gardeners of America was read :—

"The members of the National Association of Gardeners of America greet you at your annual conference, and as brother gardeners extend to you the right hand of fellowship.

"As there is strength in unity, all gardeners should unite in an effort to uplift their profession and to gain for it the recognition to which it is justly entitled. While the conditions which govern the gardeners in the United Kingdom and in America are not alike, there are, however, many opportunities for co-operation between the Gardeners' National Associations for the general betterment of gardening; so we extend to you an invitation to join us in the co-operative movement which we are about to inaugurate in the United States which, with your co-operation, would make it international.

"William H. Waite, President,
"Madison, New Jersey.

"July 17, 1914."

And from the President of the German Gardeners' Association at Berlin, from which we extract the following :—

"First of all, let me, on behalf of the whole of our Council, send our heartiest greetings to your general meeting in Manchester. We hope everything will go off successfully, and that the coming year will see us in still friendlier and closer relationship. We thank you for sending us regularly your esteemed *Journal*."

It was unanimously resolved to return friendly acknowledgments to these letters.

The adoption of the annual report and balance sheet was moved by the Chairman, who briefly reviewed the work of the past year, and expressed the wish that individual members would realise their responsibilities and do their utmost to further the interests of the Association. The financial position was dealt with, and the Chairman explained that the new rule whereby subscriptions may be paid half-yearly had been taken advantage of by some members. The total receipts for the year were £434 17s. 2½d. The expenditure amounted to £512 6s. 2d. This shows an increase in receipts of £61 16s. 5½d. and on the expenditure side of £47 16s. 7½d. A considerable sum is still due for subscriptions and advertisements. The Sustentation Fund which was opened on behalf of three members was well supported.

Four hundred and fifty-nine new members have been enrolled during the past year, as against 335 in the previous year. The present membership is about 2,300.

In 300 private gardens and nurseries the weekly half-holiday has been granted. Eleven new branches have been opened during the year, making the total number twenty-eight. The Association has provided legal assistance to several members.

The adoption of the report and balance sheet was seconded by Mr. R. Greenfield.

The scrutineers' report was read, and the following were elected to serve on the Executive Council :—Messrs. E. F. Hawes, J. Collier, T. Winter, R. Greenfield, H. S. Bowell, A. E. Cresswell, R. Johnson, E. Holdup, G. Rimmer, and W. Collins. Messrs. H. Hoddinot and R. Tyford were co-opted to fill other vacancies.

The following motion from the Carlisle branch was moved by Mr. Batty, "That honorary members shall be entitled to vote at any meetings of the Association." After considerable discussion the matter was held over until next year.

A motion from the Sheffield branch to extend the qualifying period of candidates for membership who are over 23 years of age was lost.

An amendment to the Edinburgh resolution, moved by Mr. Hawes and seconded by Mr. R. Johnson, "That Foresters be admitted to membership of the B.G.A.," was carried unanimously. A further amendment by Mr. Hawes that "The Extension Fund be continued at the discretion of the Executive Council" was adopted.

On the proposal of Mr. J. Balmforth, the Altrincham resolution, "That branch secretaries be allowed £1 in hand for incidental expenses," was carried.

Mr. H. S. Bowell (Hampton) opened the case for the unemployment scheme in a well-reasoned speech. He gave all the salient points regarding the establishment, and by means of carefully drawn up tables showed the estimated income and expenditure under graduated scales, and on behalf of the Hampton Branch moved, "That a voluntary scheme of unemployment insurance, on a contributary basis, be instituted for members of the

Association." This was seconded by Mr. R. Johnson (North London). A discussion ensued in which Messrs. R. Greenfield (who referred to the Leamington amendment), Hagon, and Stratford (Blackburn) took part, and the motion was carried unanimously.

Mr. Hawes moved, "That the motion having been accepted in principle, a sub-committee should be appointed by the Executive Council to draft a provisional scheme, which should be submitted to the members for ballot, and the opinion of this meeting be taken on the various amendments as set forth on the agenda. This was seconded by Mr. Ellis and supported by Messrs. Greenfield, Boyd, and others, and carried unanimously.

A resolution from the North London Branch, moved by Mr. R. Johnson, which suggested revising the rates of pay, etc., in the B.G.A. programme, seconded by Mr. Batty, was adopted.

On behalf of the Birmingham Branch, a resolution was moved by Mr. J. Dyfri Jones, "That delegates (properly elected by branches) attending the Annual Conference to represent their branches shall have voting power representing the strength of their branch," and this also was adopted.

On behalf of the Executive Council, Mr. Hawes moved the following resolutions :—(a) "That the financial year shall end on December 31"; (b) "That the annual subscription of members elected after January 1, 1915, shall hold good for twelve calendar months from date of election." The two resolutions were carried.

On the motion by the North London Branch, proposed by Mr. Johnson, it was decided that retiring members of the Executive Council should be eligible for re-election. A recommendation to increase the salary of the general secretary was adopted, and a worthy tribute paid to the excellent work carried out on behalf of the B.G.A. by Mr. Harding during his tenure of office.

Mr. Greenfield, on behalf of the Leamington Branch, gave a formal invitation for the holding of next year's Conference at that town, and read a letter from the Town Clerk offering the use of the Town Hall, if disengaged, for that purpose. It was decided to hold next year's Conference at Leamington. A vote of thanks to the chairman brought the proceedings to a close.

The meeting was followed by the annual dinner, at which Bishop Welldon presided. Over 50 members and friends were present.

LEAMINGTON AND COUNTY.

July 22, 23.—The annual Show of this Society is gradually being recognised as a county function, and visitors from far and near come to see the excellent displays of flowers, fruit, and vegetables provided for them. Although the Society has only been in existence for six years, its progressive policy is fast placing it among the most up-to-date and best managed flower shows in the Midlands. The exhibits were contained in five conveniently arranged tents, which afforded space of about 28,000 square feet.

Roses were particularly good; the variety George Dickson was the Rose of the show; it was represented in almost every stand in which H.T.'s were admissible, and in the exhibit which secured for Mr. T. Robinson the Challenge Cup for a group of Roses on a space of 12 feet by 4 feet, it was marvellously well shown. Sweet Peas were excellent; Carnations were numerous and good, also fruits and vegetables.

No fewer than nine Challenge Cups were offered, of which two were won outright, viz., one by Mr. T. Jones for Sweet Peas, and the other by Mr. Albert Cay for Ferns. Three exhibitors responded to the committee's invitation to exhibit in the new class for hardy flowers, to represent a border of growing flowers. The challenge cup offered for the best display was well won by Messrs. Gunn and Sons.

The pronounced success of Mrs. Jenkins in the open plant classes was the subject of general remark. Her exhibits were magnificent. Alderman Holt, the founder of the Society, was as busy as a bee from early until late. He was ably supported by the Hon. Show Superintendent and a committee of excellent workers.

Plants (Open).

Groups and Specimen Plants.—The plant group class is always a feature at Leamington, and, although there were only three exhibits in the principal class, they were exceedingly beautiful and very much admired. Each group occupied 240 square feet, and made a very imposing effect down the centre of the tent. 1st, Messrs. James Cypher and Sons, Cheltenham, whose exhibit was remarkable for the abundance of richly-coloured foliage plants and flowering specimens. A rustic arch, crowned with a stately Kentia and clothed with Codiaeums, Liliums, Fuchsias, and Asparagus, spanned the centre of the group, in which Cattleyas, Kalanchoe flammea, Clerodendron fallax, Codiaeums, Dracaeneas, and Ferns were skilfully arranged. 2nd, Sir George H. Kenrick, Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), whose exhibit compelled admiration by reason of its richness, variety, and artistic arrangement. 3rd, C. C. Shaw, Esq., Thornbank, Leamington (gr. Mr. W. Bartlett).

Messrs. Cypher and Sons beat the last-named exhibitor in a class for 12 stove and greenhouse plants, distinct, not fewer than four to be in bloom. and all to be shown in pots not exceeding 10 inches in diameter. The first prize collection contained 8 plants in flower, viz., 4 beautifully flowered Ixoras, 1 Clerodendron fallax, 1 Statice intermedia, 1 Erica ventricosa Bothwelliana, and 1 Chironia ixifera.

The three Fuchsias which gained first prize for Mrs. Jenkins, Westwood, Leamington (gr. Mr. M. Golby), were profusely flowered specimens, especially the variety Gertrude Pearson, which was one of the most shapely specimens we have seen for many years. Mrs. Jenkins (gr. Mr. M. Golby) also won 1st prize for three finely-trained, well-coloured Coleus. 2nd, J. H. Burley, Esq , The Grange, Leamington (gr Mr. H. J. Finch), with much dwarfer but very creditable plants. Mrs. Jenkins led in the next class, which was for six tuberous-rooted Begonias. The specimens exhibited had large double flowers of great substance, and unusually stout, rich green foliage. 2nd, Mr. W. E. Masters, Warwick. In a class for 6 Gloxinias Mrs. Jenkins also won 1st prize with moderately sized but wonderfully well-flowered plants. We counted 30 splendid flowers in one specimen. 2nd, J. W. Lamplough, Esq., Leamington (gr. S. Vincent). Mrs. Jenkins repeated her success in a class for 3 Zonal Pelargoniums, and in another for one plant in bloom. All the four plants (Pelargoniums) were noted for good culture and freedom in flowering. There were four good exhibits against 8 last year in a class for 6 table plants. 1st, Messrs. W. Pemberton and Son, Walsall, who showed 4 narrow-leaved Codiaeums, one Aralia, and one Cocos.

Albert Cay, Esq., Woodside, Kenilworth (gr. Mr. G. Marlow), had the best of 5 exhibits in a class for 3 Ferns, distinct. He showed 2 very large, healthy specimens of Nephrolepis and one Gymnogramme. 2nd, Mrs. Jenkins (gr. Mr. M. Golby), who had a splendid example of Nephrolepis exaltata. The best foliage plant was Cycas revoluta, exhibited by C. C. Shaw, Esq. (gr. Mr. W. Bartlett). The class for a group of Ferns on table space of 24 feet by 4 feet was well contested, and very many good specimens were exhibited. The first prize, a challenge cup, value 25 guineas, was won by Albert Cay, Esq., Woodside, Kenilworth (gr. Mr. G. Marlow). Included in this splendid group were good varieties of Adiantum, Nephrolepis, Polypodium, Gymnogramme, Pteris, Lygodium and Davallia. As Mr. Cay won this cup in 1912 and 1913, it now becomes his property. 2nd, C. C. Shaw, Esq., Leamington (gr. Mr. W. Bartlett). 3rd, H. L. V. Pryse, Esq., Surrey House, Leamington (gr. Mr. E. Pritchard). There were five entries.

Roses.

As already pointed out, Roses were a feature. The class for a group of Roses, cut flowers, or pot plants, or both on a space of 12 feet by 4 feet, was a particularly good one. There were 4 exhibits against one last year. The 1st prize, a challenge cup, value 25 guineas, presented by C. C. Shaw, Esq., to replace the one won by Messrs. Gunn and Sons last year, and £6 given by the Society, was won by Mr. T. Robinson, Nottingham, whose flowers, arranged in bold masses, were of superb quality, especially the central mound, covered with the deep crimson H.T. George Dickson, whose stout petals and intense colouring were the admiration of visitors. Another feature was the beautifully decorated pillars, and the tall, profusely flowered standards of Rambler varieties at the back of the exhibit, and across which festoons of Crimson Rambler produced a pretty effect. In the body of the group exquisite flowers of many choice varieties were well shown. It should, however, be noted that some of the vases near the front of the exhibit were rather too conspicuous, but the neat edging of pink and crimson cluster Roses gave a good finish to a really excellent group. 2nd, Messrs. Gunn and Sons, Olton, Birmingham, with a grand decorative display, but the flowers were less good and they were rather overcrowded.

Twenty-four Blooms, Distinct.—Half a dozen very fine stands were placed before the judges, who awarded 1st prize to Messrs. Perkins and Sons, Coventry, whose blooms were of extra good quality and beautifully set up, each flower being displayed to the best advantage. The outstanding varieties were Lieutenant Chauré, Horace Vernet, George Dickson, Edward Mawley, Hugh Dickson, Claudius, Frau Karl Druschki, and Mrs. Joseph H. Welch. 2nd, Mr. John Mattock, Oxford, who had splendid specimens of Mrs. A. E. Coxhead, Ulrich Brunner, Mrs. John Laing, George Dickson, Edward Mawley, Earl of Gosford, and Claudius. 3rd, Mr. Henry Drew, Faringdon, Berks, in whose exhibit we observed a perfect specimen of George Dickson. An extra prize was awarded to Mr. W. T. Mattock, Oxford.

Twelve H.P.'s, Distinct.—The last-named exhibitor was placed first with grand flowers of Dupuy Jamain, Mrs. John Laing, Marie Baumann, Madame Eugene Verdier, A. K. Williams, and Hugh Dickson. 2nd, Mr. John Mattock, who had Hugh Dickson, Ulrich Brunner, and Charles Lefebvre in superb condition. Mr. W. T. Mattock also won 1st prize for the best 6 blooms of H.P. Roses, one variety. He showed Gloire de Chédane Guinoisseau. 2nd, Messrs. Perkins and Sons, with Hugh Dickson.

Twelve Tea Roses, Distinct.—Four exhibits were made in this class. 1st, Messrs. Perkins and Sons, who showed Mrs. Myles Kennedy, Mrs. Foley Hobbs, May Miller, and Madame C. Soupert. 2nd, Mr. Henry Drew, Faringdon.

Six Tea Roses, One Variety.—Here again Messrs. Perkins and Sons excelled with exquisitely shaped, beautifully fresh specimens of May Miller. 2nd, Messrs. Gunn and Sons, with typical flowers of Madame Jules Gravereaux.

Carnations (Open).

Four classes were provided for Carnations. Three contestants met in the principal class, which was for cut blooms arranged in a space of 10 feet by 4 feet. The challenge cup, value 25 guineas, and £4 offered as first prize, was won by Mr. C. Engelmann, Saffron Walden, whose flowers were displayed in vases on a white base. A superb vase of Carola figured in the centre of the group, and White Perfection stood out conspicuously against the green background. Towards the front of the exhibit Lucy (pink), Lady Meyer (pale pink), and Scarlet Carola were seen to excellent advantage. Sprays of Asparagus Sprengeri were used for relief. 2nd, Messrs. Young and Co., Cheltenham, who had large masses of Duchess of Devonshire, Rose Enchantress, May Day, British Triumph, and Marmion. 3rd, Colonel F. W. Rideout, Langley, Bucks. The last-named exhibitor scored in the following class reserved for 12 vases of Carnations, in which border varieties were excluded. At least 6 varieties were required, and no fewer than 6 blooms in a vase with Carnation buds and foliage. The first prize collection included good quality flowers of White Enchantress, Mrs. C. W. Ward, Winsor, Mikado, Rose Pink Enchantress, and Enchantress. 2nd, J. B. Akroyd, Esq., Birdingbury Hall, Rugby (gr. Mr. F. Daniels), who had good vases of Countess of Latham, White Perfection, and Carola. 3rd, Mrs. G. A. Fenwick, Hillmorton (gr. Mr. E. Burbidge). In a class for 12 self-border Carnations in vases with Carnation buds and foliage, Messrs. A. R. Brown, Ltd., took the lead with Mrs. Angus (pink), John Knox (deep crimson), Cecilia (yellow), Attraction (white), Prairie Belle (white), and The King (scarlet). 2nd, Mr. R. G. Rudd, King's Heath, with Mrs. F. W. Flight, Rosy Morn, Cardinal, Farthest North, and Mrs. G. Marshall. Mr. R. G. Rudd was successful in the class for 12 border Carnations (fancy or Picotees). Mr. C. H. Herbert and Messrs. A. R. Brown, Ltd., were placed 2nd and 3rd respectively. Mr. Rudd showed handsome flowers of Queen Eleanor, Pasquin, Hercules, Linkman, Forester, and Becky Sharp.

Hardy Flowers (Open).

In a class for 20 bunches of hardy border flowers, distinct, mixed bunches not allowed, annuals, biennials, shrubby plants and trees were excluded. The prize, a challenge cup value 25 guineas, and £5 was won by F. Bouskell, Esq., Market Bosworth (gr. Mr. G. Hollis), for a grand lot of flowers, in which Phlox Frau Von Lassburgh, Lilium chalceodonicum, Helenium pumilum magnificum, Anthemis Kelwayi, Pentstemon Newbury Gem, Lathyrus White Pearl, and a vase of Alstromerias were well shown. 2nd, Messrs. Gunn and Sons (last year's winners) had a good lot of flowers, but with fewer in a bunch. Scabiosa caucasica, Lilium auratum, and Gaillardia Grandiflora were the best examples in this attractive exhibit; 3rd, Mr. C. H. Herbert, Acock's Green.

Mr. J. Bouskell repeated his success in the class for 12 bunches of hardy border flowers, distinct bulbous plants excluded. He showed excellent bunches of Spiraea Arendsii Ceres, Veronica foliosa, Linaria aurea, Alstromeria chilensis, and Galega Niobe; 2nd, Mr. C. H. Herbert, Acock's Green.

A new class was provided for hardy border flowers, including annuals and foliage plants (shrubs and Roses excluded). Cut flowers were required to be shown in water. The three exhibits were arranged at the side of a tent on a ground space of 20 feet by 6 feet to represent a border of growing plants. Quality, variety, and arrangement were the tests of merit. Although a big and rather difficult class to fill, the committee is to be congratulated on the success of this new departure, which gave additional interest to the show. Messrs. Gunn and Sons, Olton, who are the winners of the challenge cup presented by the Earl of Craven, Lord Lieutenant of Warwickshire, and £5 given by the Society, exhibited a very bright and pleasing collection of flowers arranged with consummate skill. No doubt many employers longed to see such a wealth of bloom on the same area in their own gardens! The outstanding features were large masses of Phloxes, Veronicas, Gaillardias, Campanulas, Gladioli, Scabiosa caucasica, Aconitums, Verbascums, Liliums, Echinops, Galegas, and Delphiniums, with Sweet Peas draping lattice-work at the back of the exhibit. A raised turf edging in the front afforded a suitable resting place for such low-growing plants as Violas, Saxifragas, Campanulas, which looked perfectly happy; 2nd, Mr. F. Bouskell's group was flat, but included excellent batches of cimicifuga racemosa, Veronica foliosa, V. spicata, Lilium chalcedonicum, and Scabiosa caucasica; 3rd, Messrs. R. Wallace and Co., Colchester.

The best 6 vases of Violas arranged with suitable foliage came from the executors of Mr. J. Marsh, Warwick, who showed a pretty lot of flowers; 2nd, Messrs. W. Pemberton and Sons, Walsall.

Sweet Peas (Open).

Some very fine exhibits were seen in the special class reserved for Sweet Peas arranged on spaces of 20 feet by 4 feet. The exhibit which secured for Mr. Thomas Jones, of Ruabon, the Challenge Cup offered by Alfred Holt, Esq., was considered to be the best of all. As Mr. Jones has been the 1st prize winner on three successive years the cup now becomes his absolute property, and he well deserves it. Superb quality and artistic arrangement well describe this magnificent group, which included 43 vases, averaging about 60 stems in each, many of the stems carrying 5 large flowers. The best varieties were Nubian, Orange Perfection, Red Star, Steaton, Lavender George Herbert, Elfrida Pearson, Millie, May Campbell, and Dobbie's Sunproof Crimson; 2nd, Messrs. Bide and Sons, Farnham.

Mr. E. Deakin, Hay Mills, Birmingham, won 1st prize in Messrs. Robert Sydenham's class for 9 varieties of Sweet Peas, and Hugh Mitchell, Esq., Hampton-in-Arden (gr. Mr. T. Batchelor), gained the corresponding award in Messrs. Webb and Sons' class for 8 varieties of Sweet Peas.

In a class for 12 varieties and in another for 6 varieties of Sweet Peas the Society's two 1st prizes were won by Lord North, Wroxton Abbey, Banbury (gr. Mr. E. R. Janes), with delightfully clean, fresh flowers borne on sturdy stems.

Miscellaneous Cut Flowers and Table Decorations.

J. H. Burley, Esq., The Grange, Leamington (gr. Mr. H. J. Finch), had the winning exhibit of 6 bunches of stove and greenhouse flowers. The most daintily arranged bouquet for the hand came from Alfred Holt, Esq., Oaklands, Leamington (gr. Mr. J. Fisher), and Messrs. Reamsbotham and Co., Bletchley, scored in the class for a bridal bouquet, as well as in another for 5 buttonhole bouquets. The Misses Robinson, Leamington (gr. Mr. A. J. Friend), showed the best three sprays suitable for a lady's dress.

There were 6 exhibits in the class for floral decorations on tables 8 feet by 4 feet. 1st, Sir George H. Kenrick, Edgbaston (gr. Mr. J. V. Macdonald), with a graceful arrangement, in which the principal colour was provided by Epidendrum vitellinum, Odontoglossums, Oncidiums, and Phalaenopsis, with Asparagus and bronze-tinted Selaginella, completed the scheme; 2nd, Mrs. E. Winchester, Rubery, with pink and yellow Roses; 3rd, Alfred Holt, Esq., Leamington (gr. Mr. J. Fisher).

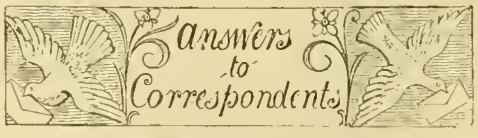
Mrs. Albin Francis, Leamington, was successful in the class reserved for ladies residing in the county of Warwickshire. This exhibitor had a tall centre-piece and 8 small flower holders. The first-named was decorated with yellow Sweet Sultan, pale pink Bridal Wreath, Lilies-of-the-Valley, Gloriosa superba, Asparagus, and Caladium and Codiaeum leaves; 2nd, Mrs. Algernon Allcock, Leamington, with Roses.

Prizes for ladies only were offered by Robert Sydenham, Ltd., for tables decorated with Sweet Peas confined to two colours and arranged in rural decorations. 1st, Miss M. L. Deakin, Hay Mills; 2nd, Mrs. T. Batchelor, Hampton-in-Arden.

(*To be concluded.*)

Obituary.

Joseph Bradbury.—The *American Florist* records the death of Mr. Joseph Bradbury, on June 27, aged 93 years. Mr. Bradbury was a native of Nottingham, but settled in America when 19 years old. He established a florist's business in South Orange, and was the owner of a large area of land in the neighbourhood.



Answers to Correspondents

Consignment Without Letter: A box containing Malope and Salvia Pride of Zurich has been received, but no letter enclosed.

Canvas Hosing: *Brockhurst.* It is quite easy to obtain canvas hosing in a narrow diameter, but it is not considered suitable for garden use, and will be found to retard the flow of the water far more than rubber hosing. Apart from the matter of drying, it is not so durable, nor is it entirely watertight.

Carnations for Exhibiting: *Carnation.* According to the R.H.S. *Code of Rules for Judging*, Carnations, Picotees and Pinks are liable to disqualification if shown as "herbaceous" plants, but are admissible in classes for simply hardy plants.

Cucumbers Bitter: *A. E. H.* This was explained in the "Answers to Correspondents" column, July 11, p. 44, where it was stated, in reply to *F. B.*, that bitterness in Cucumbers is usually due either to drought or excessive wet at the roots; or through the fruits taking an unduly long time to develop owing to partial exhaustion of the plants.

Employment in Public Park: *R. V. J.* You should inquire of the superintendent if there is a vacancy, giving particulars of your experience. The London squares are mostly private property. Write to the secretary, Metropolitan Public Gardens Association, 83, Lancaster Gate, London.

Gloriosa Tuber Failing to Start into Growth: *H. B.* It is probable that the growing point of the tuber has been injured. Gloriosas grow from the apex of the tuber, whether simple or forked, and if those points are broken off or damaged the root-stock, although it may keep sound for years, will find it very difficult to start into growth again.

Multiflowered Begonia: *H. P., Southover.* The dense head of blossoms was brought about by the suppression of the lateral branches, each of which normally bears a flower. It is not uncommon for the lateral branches to be reduced considerably in length, but it is rare for them to be suppressed altogether.

Names of Plants: *H. S.*—The Begonia resembles Lloydii, and is probably of the same origin. There are many varieties of this race of tuberous-rooted Begonias, all of which have been derived by crossing some of the finest forms of the garden race back on to the old Begonia boliviensis. This species has a long, slender, pendulous habit, and has had a marked effect on its offspring. The hybrid on account of its habit has become a general favourite for basket work, and is readily raised from seed in many shades of red, rose, pink, and white.—*A. M. L.* 1, Catanache coerulea; 2, Silene armeria; 3, Odontospermum (Asteriscus) maritimum.—*E. H. C.* Lycium barbarum.—*Subscriber.* We believe the variety of Rose is "The Farquhar."—*A. Robinson.* Pyrus Aria (White Beam Tree).—*A. M. L.* 1, Calycanthus occidentalis; 2, Polygonum cuspidatum; 3, Rhipsalis species, fruits required for name.—*E. C. A.* Catalpa bignonioides, often called C. syringaefolia in gardens.—*R. F., Tulse Hill.* Lysimachia vulgaris. A British plant often grown in gardens in hardy flower borders.—*Hart, Pendurves.* Hypericum perforatum and Linaria vulgaris, both common British plants.—*W. D. J.* 1, Too small to identify; 2, Hybrid Azalea, very near A. occidentalis var. alba.—*E. Semper.* Hypericum Androsaemum. *A. R. S.* 1, Cupressus macrocarpa; 2 and 3, C. pisifera var. squarrosa; 4, Pseudotsuga Douglasii; 5, Cupressus pisifera; 6, C. p. var. aurea.

Sulphate of Ammonia for Lawns: *J. H.* The most convenient way to apply sulphate of ammonia to lawns is to mix it with sand, or with finely sifted soil, using three, four or more parts of sand or soil to one of sulphate of ammonia; the amount of the latter should be half ounce to the square yard.

Tomatos: *G. W. T.* The hard, yellow patches at the base of the fruits are due to a lack of potash in the soil. Mix wood ash with the potting compost, and apply a little Kainit as a top-dressing when the plants are setting their fruits.

Communications Received.—A. Fountains (the 1s. 6d. has been placed in the R.G.O.F. box)—B. J.—Raven—Interested—Wicklow—J. S.—Rosetta—E. C. A., Enham Place—T. A. H. J.—H. C.—J. M.—W. H. S. & Sons—W. G. W.—J. W. W.—T. H. C.—H. H.—Hendon—C. J. B. M.—W. E. P.—P. & Co.—C. J. W.—T. G.—N. E. H. S.—J. S.—J. N.—Shrub—A. R. S.—E. S.—Anxious—W. D.—E. H. C.—E. W.—Haverstock Hill—G. W. T.—A. M. L.—A. R.—L. H. B.—C. J.—G. H. C.—T. T. & Co.—W. S.—E. B.—H. S. T.—C. J. G.—F. N.—E. M.—F. W. J.—R. O. W.—S. A.—W. T.

THE
Gardeners' Chronicle
No. 1441.—SATURDAY, AUGUST 8, 1914.

CONTENTS.

Aloe pretoriensis .. 105
Books, notices of—
  Botanical Magazine.. 117
  Perfumery and Essential Oil Record .. 109
  Report of Forestry Branch of Board of Agriculture.. .. 108
Brassicas, club root of 118
Brittonastrum ionocalyx 109
Broccoli, old and new.. 119
Cambridge Botanic Gardens 114
Cedrus Deodara.. .. 119
Essex farmers and wheat-growing .. 117
Florists' flowers, Darwin Tulips 111
Food supplies, the care of 114
Forestry Conference at the Anglo-American Exhibition 120
French horticulture, notes on 107
Fruit crops, remarks on the condition of the 109
Fruit syndicate, a French 114
Gardens for London children 118
Glasgow as a centre for overseas fruit trade 114
Holland, fruit and vegetable crops in.. .. 114
Lilium nepalense in Australia 117
Odontonia Charlesworthii 107
Orchids at Rosslyn .. 107
Preserving and storing of fruit 105
Restio subverticillatus 119
Rosary, the—
  Some Rose peculiarities 105
Saprophytic fungi as parasites 106
Scotland, the weather in 119
Societies—
  Ayrshire Sweet Pea and Rose 122
  Bishop's Waltham .. 121
  Debating 123
  General Bulb Growers of Haarlem 122
  Leamington & County Hort. 119
  Midland Carnation and Picotee.. .. 120
  Royal Horticultural 114, 119
  Royal Hort. of Victoria 122
  Scientific Committee 119
Spinach and its substitutes 117
Strawberry, pests of the 118
Sweet Pea competitions at Shrewsbury .. 121
Tomatos, black rot of.. 114
Week's work, the.. 112, 113

ILLUSTRATIONS.

Aloë pretoriensis 106
Brittonastrum ionocalyx 109
Garden at Stepney cultivated by children 118
Gladiolus Loveliness, 108; G. White Giant 111
Laelio-Cattleya Miss Louisa Fowler.. 115
Lilium nepalense, bulb of 117
Odontonia Charlesworthii 107

PRESERVING AND STORING OF FRUIT.

IT requires no insistence on our part to convince gardeners that it is their bounden duty to allow none of the fruits in which the present harvest is so bountiful to be wasted. Let every gardener in charge of a piece of land follow the advice given on p. 114; let all who have fruit ripening on their trees see to it that none is wasted or used extravagantly. If this be done, as it must be done by all gardeners, they will have made a contribution of not inconsiderable value to the problem of the food supply of the nation. The fact that the wheat and meat stocks are plentiful, and the prospect that supplies of these major food staples will be forthcoming should deter no one from practising from now onward, thrift, economy, and foresight.

Those who have access to the standard works on the subject of fruit and vegetable preserving will find full instructions as to how to deal with their surplus supplies. See, for example, *Thompson's Gardeners' Assistant*, and also *Journal of Royal Horticultural Society*, vol. 28, p. 101.

For those who have no books of reference at hand we give the following instructions:—

Bottling.—Fruit (and Vegetables) may be bottled whole or sliced. Choose, if possible, bottles of clear glass. Clean them thoroughly. Pick the fruit, clean and dry, and place it in the bottles. Stand the latter in water in an open boiler up to their necks. Leave the bottles open. Slowly raise the water to the boil. The fruit is about ready when the water boils. Take out the bottles singly, and put into them at once boiling water from a kettle, and without delay tie the mouths down with clean bladder or corks (previously scalded), and seal the corks with sealing or bottle wax. Remember to boil the water gradually and to seal the bottles whilst the water is still boiling. Apples, Pears, Plums, etc., may be treated in this way, and so also may Beans and suchlike vegetables.

Fruit and Vegetable drying may be done by machines which may be bought for from 30s. upwards.

For those who have glasshouses or frames at their disposal we give recommendations (see p. 123) as to the best use to which they may be put during the coming months.

THE ROSARY.

SOME ROSE PECULIARITIES.

THE charm of the Rose lies not only in its glorious colour form and perfume, but in its great diversity and individuality, and to a true Rose lover it is these latter qualities which make such appeal.

At this season when the first flush of the flowering period is past one may take stock of such peculiarities and make note of them for future use. On a June morning in an old-fashioned garden one may stop before a bush of Hybrid Perpetual and exclaim that the Hybrid Perpetuals are still the best and most glorious Roses of the garden, but at the present date the second thoughts would not be the same. With most of the flowers past (and the season, on account of the continued spells of dry weather, was shorter than usual) we are anxious and impatient for the second crop, and those varieties which are now breaking freely for their second growth should be noted. Among them will be found the inevitable Mme. A. Chatenay, considered by most people who are not exhibitors as the most perfect all-round Rose in cultivation. Other such Roses are Paul Lede, far too seldom seen, General McArthur, Richmond, Dean Hole, Lady Pirrie, Miss A. de Rothschild, Sunburst, Mrs. Geo. Shawyer, Prince de Bulgarie, and the variety which is considered as an improvement on the last named, Mme. Rostand, Mme. Lutaud, the improvement in habit on Marquise de Sinety, Mme. Jules Grolez, all of which may be counted upon to give early flowers for a second crop, and are in consequence among the most valuable Roses.

The lasting quality of Roses in a cut state is a point which one day will, in all probability, be more considered than it is to-day. The chief reproach to the Rose is that it does not last as well in a cut state as some other flowers, but there are plenty of sorts which excel as lasting Roses, and here again Mme. A. Chatenay scores. Sunburst is one of the best, and so too is the newer Mrs. Chas. Russell, which is extraordinary in this respect, for it will last in water a week after being cut. In the same category may be included Lady Alice Stanley, Château de Clos Vougeot, A. R. Goodwin, Louise C. Breslau, Dean Hole, Frau Karl Druschki, George Dickson, Juliet, Leslie Holland, Lieut. Chauré, Mme. Chas. Lutaud, Mme. Rostand, Mme. Ségond Weber, Margaret, Mrs. Alford, Mrs. John Laing, Ophelia and Willowmere, all varieties with petals of great substance.

Then we have the early-flowering Roses, those varieties which are the first to greet us in the spring when Roses are most precious. Juliet is one and Lady Battersea is another which blossom before the summer is on us. British Queen, General McArthur, Mme. Abel Chatenay, Molly Sharman Crawford, Lady Hillingdon and Lady Pirrie, will all follow closely on.

Roses of brilliant colour are among the developments of recent years and sorts which retain their colour in and in spite of bad weather conditions will be wanted more in the future than in the past, for the reason that with the influx of so many new varieties the field of choice is so large that with a little attention the planter can select sorts which are not so badly affected by adverse weather conditions in the same way as the older sorts. There is, for instance, the brilliant Leuchtfeuer, a little-known but gorgeously-coloured scarlet-crimson shaded Rose, which, although classed as a China, is almost a Hybrid Tea in form, and Château de Clos Vougeot. Both of these varieties positively improve with hot sun, instead of "blueing" in the manner of most, if not all, other Roses of this colour when exposed to strong sun. Such points as these are well worth considering when forming Rose beds, because, instructive and enjoyable as the exhibitions undoubtedly are, they do not reveal the weak spots of a Rose as a rule, nor indeed always its best points, because while dressing of show varieties is so much allowed and practised, the show box is too often misleading.

The excellent advice given from time to time in the *Gardeners' Chronicle* by *White Rose* provides much food for thought, but that which suggested a large proportion of varieties should be placed in a lethal chamber is of the best that has been given. On occasions, every Rose is good, but the number of varieties which excel throughout a season is comparatively small. This brings one to another Rose peculiarity, viz., that which provides a good flower in wet and fine weather, for both the wet-weather Rose and the Rose for dry seasons have their uses. *Laurence J. Cook, Bush Hill Park.*

NEW OR NOTEWORTHY PLANTS.

ALOË PRETORIENSIS POLE EVANS (N. SP.)

ANYONE who has had occasion to visit the Union Buildings at Pretoria during the past month cannot have failed to notice a very striking group of Aloës in flower just below the western wing of the building. The plants are remarkable for their brilliant and tall inflorescences. So conspicuous are they that they form a bright scarlet patch of colour in the landscape, and are visible from a considerable distance. Although this Aloë (see fig. 44) occurs in several localities in the Transvaal little or no mention of it is found in botanical literature, but specimens are preserved in the different South African herbariums under the names Aloë lineata, Haw., A. arborescens, Mill., and A. pluridens, Haw. Most of these specimens have been obtained from Pretoria and other Transvaal localities.

A field study of this Aloë in its natural haunts, and a more critical examination of its characters in the laboratory, has convinced me that it is quite a distinct species from any of those mentioned above. I propose to name it Aloë pretoriensis, and will detail its chief characteristics below.

It would seem that the plant was first collected in Pretoria so far back as May, 1886, for in a note under A. pluridens, Berger* mentions that an Aloë probably belonging to this species was collected by A. Schenk No. 738 in Meintjes Kop in 1886. Only three species of Aloë occur naturally on Meintjes Kop, viz., A. transvaalensis, A. Davyana, and the one now under discussion. Of these only the flowers of the last mentioned could possibly be regarded as resembling Aloë pluridens, and therefore, since I have not had an opportunity of comparing Schenk's No. 738, I think it only reasonable to assume that the Aloë which he collected could have been no other than the one under discussion. Furthermore this Aloë is by far the most abundant and conspicuous of the three found on Meintjes Kop. It also flowers during May, at a time when A. transvaalensis bears ripe capsules and Aloë Davyana is hardly in flower.

Berger also suggests that this Aloë may possibly belong to one collected by F. Wilms No. 1,484 in the Lydenburg district. I have examined Wilms' specimen from the Lydenburg district from a small collection of his plants preserved in the Herbarium of the Transvaal Museum, and I find that it differs in many important respects from the Pretoria Aloë. In fact, I have no hesitation in referring Wilms' specimen to A. arborescens, Mill., which I know from personal observation is very plentiful in that neighbourhood.

Aloë pretoriensis occurs commonly on many of the kopjes around Pretoria. It grows plentifully on the northern slopes of Meintjes Kop, and extends from here in an easterly and westerly direction on the range of hills composed of the Daaspoort quartzite; it is also found in the Spekboom valley near Lydenburg, at Barberton, and along the foot of the Lebombo range of mountains.

The most distinctive feature of the plant is its tall branched inflorescence, the racemes of which are densely clustered with brightly-coloured flowers. The general habit of the plant and its tall inflorescence is shown in the accompanying photograph (fig. 44). Mr. Wickens, gardener in charge of the Union Buildings grounds, who is shown standing alongside, is over 6 feet in height.

The flowers contain a quantity of honey, and consequently attract large numbers of brilliant sunbirds. The dense rosette of tapering leaves, usually withered at the tips, have frequently a very characteristic bright red hue about them, and spring from a stoutish stem 4-5 inches in diameter. The stem is dark brown to black in colour, extremely rough, and clothed throughout its entire length by the remains of withered leaf-stalks.

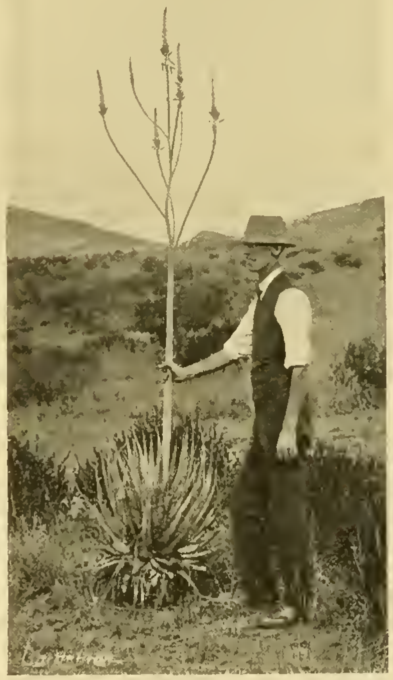
At first sight this Aloë certainly resembles A. lineata in general habit, but on closer examination it is found that the leaves are more narrowly linear-lanceolate than is the case with Aloë lineata.

There are no very distinct green vertical lines on the leaf, such as occur in Aloë lineata, and the prickles are wider apart and more regularly spaced. In Aloë lineata the peduncle is unbranched, and from 1 to 2 feet in length, whereas in Aloë pretoriensis it is many branched and measures from 3-9 feet in height. The plant may be described as follows :—Stem short, sometimes reaching 1 metre in length, 8-12 cm. in diam. Leaves numerous, 30-60 in a dense rosette, arcuate erect, 30-65 cm. long, 3-7 cm. broad at the base, 8-10 mm. thick, lanceolate and distinctly acuminate, flat above, slightly canaliculate towards the tips, convex below, light green or slightly glaucous, armed along the margin with sharply pointed, red, horny prickles, which are 3-4 mm. long and 10-17 mm. apart; tips of most of the older leaves withered and reddish in colour. Inflorescence 2-3.5 metres long. Peduncle stout and branched, from 2-8 branches, erect-patent, subtended by deltoid-ovate bracts at the base. Racemes conical-cylindrical 15-50 cm. long, dense, with loosely pendulous flowers, floral bracts ovate-deltoid, many veined, at first densely intricate, 15-20mm. long, and 10-12 broad. Flowers cylindrical, slightly swollen towards the middle and tapering towards the tips, rich peach red, 40-43 mm. long, pedicels 20-25 mm. long; segments free, yellowish-green at the tips. Anthers and style shortly exserted, filaments and style pale greenish-yellow, anthers reddish-brown.

Flowering on Meintjes Kop, Pretoria, May, 1914. *I. B. Pole Evans, The Botanical Laboratories of the Union of South Africa, Pretoria.*

HOW SAPROPHYTIC FUNGI MAY BECOME PARASITES.*

It is very generally believed that diseases of plants caused by fungi continue to increase in number, and in the case of cultivated plants this is probably true, not because the adaptive power of fungi is greater than at any previous period, but simply because the opportunities for exercising the adaptive power possessed by fungi are more frequent at the present time, too often due to a departure from the normal on the part of the host-plant, brought about by cultivation.



[*Photograph by I. B. Pole Evans.*

Fig. 44.—Aloe pretoriensis, just coming into bloom: flowers rich peach-red colour.

Quite recently my attention was called to a batch of Clerodendron fallax, Lindl., in one of the houses at Kew; the gardener had noticed the presence of numerous minute watery-looking drops on the under surface of the leaves, an unusual phenomenon not to be found on another batch of the same kind of plant growing under slightly different conditions as to temperature and moisture. On investigating the matter it was found that the under surface of the leaf, more especially towards the base, was studded with comparatively large, peltate glands, supported by a very short central stalk. These glands each exuded a liquid drop which had a very sweet taste. The ubiquitous floating spores of Cladosporium epiphyllum, Pers., found these sugary drops a congenial pabulum, and each gland was soon tipped with a fruiting tuft of Cladosporium. At first the Cladosporium was strictly confined to the glands, and depended on the secretion for its support, but it gradually passed from the saprophytic condition, and entered that of a facultative parasite, passing beyond the range of the gland and attacking the surrounding living tissue of the leaf, forming conspicuous brown, dead patches on the upper surface. Three weeks after the disease first appeared the spores of the fungus were capable of infecting any portion of the leaf, quite apart from receiving an initial start on the sugary excretion from a gland. The above is a concrete example of a saprophytic fungus becoming a parasite within a brief period of time. It is unlikely that all the conditions necessary to effect this change will ever occur again, hence the epidemic will be of short duration, but it can be readily imagined that if the host-plant had been an outdoor crop, and the epidemic had remained unchecked, the fungus might have become a pronounced parasite, capable of continuing its ravages for all time.

Judging from the number of examples sent to Kew for determination, mechanical injuries of various kinds, often self-inflicted, are a source of perplexity as to their origin. Wind is the most important factor. The gourds that are trained up poles in the herbaceous ground furnish striking examples. When a young fruit happens to be overhung by a leaf, and the latter is gently swayed to and fro by the wind, the rigid hairs on the under surface of the leaf form a series of more or less parallel scratches on the surface of the fruit. As the direction of the wind changes, the series of lines on the fruit cross each other diagonally or form a more or less regular pattern. Such wounds are not very noticeable at first, but as the fruit increases in size the wounds are torn wider apart and periderm is formed along the edges of each wound, so that by the time the fruit has reached its full size each individual scratch is clearly outlined by a raised ridge of whitish periderm. The above is what happens if no fungus appears on the scene, but as a rule the wounds while quite newly made are invaded by the spores of some facultative parasite, most frequently Botrytis or Cladosporium. In this case the original source of injury is soon obliterated, and a soft rot follows.

The leaves of Gooseberries are frequently scratched by the spines on neighbouring branches; the sign that wind has been the active agent is indicated by the parallel rows of scars, which become clearly outlined by whitish periderm.

Holly leaves often suffer from the effects of wind, becoming wounded by the spines on the leaves of a neighbouring branch. When actual perforations are made the injury is usually attributed to some insect. When the leaves are only slightly punctured the wound often forms a starting point for one of the many micro-fungi attacking leaves, or a growth of periderm gives the leaf a spotted appearance.

The opportunities described above for saprophytic fungi having a tendency to become parasites must necessarily be repeated in a wholesale manner in nature. In the majority of instances the opportunity is not of sufficiently long duration to enable the fungus to become an obligate parasite, which only means that a fungus has fed for so long a time on food supplied by one special kind of host-plant, that it cannot change, without undergoing at least very great inconvenience to itself, or if it has become rigid, cannot change under any circumstances. For this reason the evolution from saprophytic to parasitic fungi is not rapid, due simply to lack of opportunity. At the same time it cannot be doubted that a certain amount of headway is made in this direction, and the primary factor rendering possible such progress may be of a very trivial nature in itself.

---

* A. Berger in Engl. *Planzenreich.* Liliac.-Asphodel. Aloin. p. 295.

* Mr. George Massee in the *Kew Bulletin.*

ORCHID NOTES AND GLEANINGS.

ODONTONIA CHARLESWORTHII.

This beautiful hybrid (see fig. 45) was raised by Messrs. Charlesworth and Co. from Odontoglossum Uro-Skinneri and Miltonia vexillaria. The influence of this unusual parentage is well seen in the flowers, which are flatly arranged on the spike, as in M. vexillaria, but with the texture and markings of the Odontoglossum, although enlarged to twice the size. The sepals and broader petals are blotched with reddish purple, the white ground showing through slightly in the central part of the petals and margin, and more so in the sepals. The lip is formed after M. vexillaria, but the broad front is coloured the rich purplish-rose seen as spotting in the best forms of O. Uro-Skinneri. The crest is yellow with a white base, having beautiful ruby-red markings.

ORCHIDS AT ROSSLYN, STAMFORD HILL.

The Rosslyn collection, belonging to H. T. Pitt, Esq. (gr. Mr. Thurgood), and one of the oldest in the London area affords striking proof of the adaptability of Orchids for culture in the neighbourhood of cities and manufacturing towns, for of the many kinds of plants grown the Orchids alone show themselves unaffected by the urban conditions. Mr. Pitt always had a liking for rare species and plants of botanical interest, and although like most others he long ago took up the work of raising hybrid Orchids, the natural species still find in him an ardent admirer. On the occasion of a recent visit many interesting plants of Bulbophyllums, Cirrhopetalums, Pleurothallis, Masdevallias, and others of that class were in bloom. Chondrorhyncha Chestertonii was then as always here in bloom, Kefersteinia lamellata, some Warscewiczellas, Bolleas, Pescatoreas, and other of the leafy Zygopetalums, which are often found difficult to cultivate, even in the open country, are doing well, and Eulophiella Elizabethae, one of the few original plants still remaining in cultivation, is strong and healthy. The little scarlet Laelia monophylla (Neocoigniauxia monophylla Schltr.), which few can induce to live for any length of time, improves annually at Rosslyn, and several plants of it are very vigorous, each being furnished with a large number of spikes.

In the large intermediate house there was a good show of Cattleya Warscewiczii and C. Mendelii, an interesting plant among the latter being C. M. Alfred Smee of fine size and colour, obtained many years ago from the collection of the late Mr. Smee, with other Cattleyas, which have all proved worthy of the esteem in which they were held by the former owner; C. porphyroglossum, the original type, and other Cattleyas have arranged with them the large purple Thunia Winniana, the white T. Marshalliana, C. Hardyana Rosslyn variety, C. Pittiae, Brasso-Cattleya William Pitt, some good forms of Laelio-Cattleya Haroldiana, and several very pretty hybrids raised at Rosslyn.

In the cool houses the Odontoglossums, and especially the blotched forms of O. crispum, which formerly realised high prices when Mr. Pitt took the lead in collecting them, are in good condition and well furnished with spikes, a fair number being in bloom. I also observed many O. Edwardii crosses, with their graceful spikes of purple and rose-coloured flowers, also O. crispum, including some pretty home-raised blotched forms. O. Pescatorei and others were in bloom, and especially interesting plants were O. crispum Pittianum, O. c. Alpha, O. c. Ashworthianum, O. c. Snow Queen, O. c. F. K. Sander, and other famous forms. O. grande Pittianum is still the best clear yellow unblotched form, and O. Williamsianum represents the highest form of the O. Schlieperianum class.

Also in bloom in the intermediate range were Maxillaria venusta with white, fragrant flowers and other Maxillarias of its class; Nanodes Medusae, the rare natural hybrid Vanda Moorei, and other Vandas, Aërides, and Saccolabiums, Catasetum fimbriatum, Cynorchis Kewensis, Oncidium Papilio, and other Oncidiums, Hemipilia calophylla with its single, prettily-marked leaf and erect spike of rose-purple flowers; Houlletia odoratissima, Angraecum Scottianum, A. Humblotii (Leonis), Phalaenopsis Schroderi, and good examples of Miltonia vexillaria, M. Roezlii and hybrids.

Among remarkable plants were a very large specimen of Dendrobium Dalhousieanum over 7 feet in height and with very stout pseudo-bulbs, and robust examples of Coelogyne pandurata with very large pseudo-bulbs and leaves. In the Cypripedium houses were noticed C. Waterloo, C. Royal Sovereign, C. Elatior Rex, C. Germaine Opoix, C. Thalia Mrs. Francis Wellesley, and other fine kinds, some of them in bloom, but the most beautiful was C. Boltonii with snow-white unspotted flower of wax-like substance.

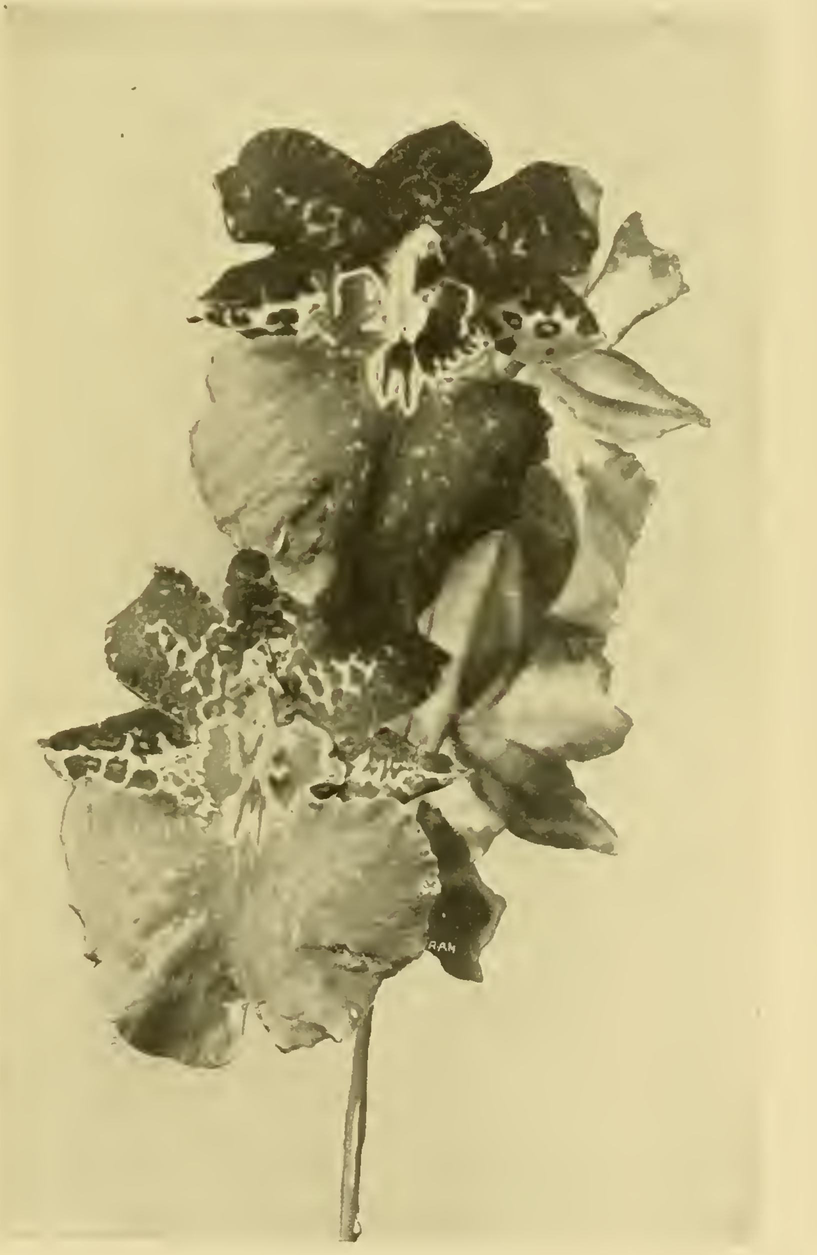


Fig. 45.—Odontonia Charlesworthii.
Awarded R.H.S. First-class Certificate, July 14, 1914.

Orchids are raised here chiefly by sowing the seeds in the surface of the material in which established plants are growing and pricking them off into store pans when large enough. The method is very successful with Cattleyas Laelias, Brasso-Cattleyas, etc.; but, although some good hybrids have been raised, is not so satisfactory with Odontoglossums, probably owing to the foggy winter experienced in the neighbourhood of London, that being the season when the Odontoglossum seedlings fail. *B.*

NOTES ON FRENCH HORTICULTURE.

The annual Congress, organised by the French Society, Les Amis des Roses, took place this year at St. Biarritz on May 29 and 30, under the presidency of M. Viger, the distinguished president of the National Horticultural Society of France. At the same time as the Congress was held a pleasing exhibition organised by the Society d'Acclimatation du Golfe de Gascogne. A full account of the proceedings of the Conference will be published in the *Bulletin* of the French Society of Rosarians. The more important proceedings of the Conference included the usual notes on the classing in order of merit and on the classification of novelties. At the present Conference the novelties of 1910 were considered and M. Croibier communicated the results of an interesting referendum to which fifty-two replies had been received. M. Chifflot reported with respect to Rose pests the considerable extension during recent years of Marssonia Rosea, a pest the presence of which is characterised by spotting of the leaves. Prevention of the pest is not easy, and resort must be had to spraying with Bordeaux mixture. An interesting note by M. Despaux dealt with the best varieties of Rose in cultivation in the region of the Pyrenees. The question of the proprietorship of horticultural novelties is one to which much attention is at present being given in France, and on this subject MM. Pernet-Ducher and Turbat made important communications at the Congress at Biarritz, as a result of which the following resolutions were adopted :—(1) It should be ascertained immediately whether the name proposed for a new variety has or has not been already employed, and whether it is possible to protect it by a trade mark (marque de fabrique). The new name, with a short description, should be entered in a special register. (2) To demand of the public authorities the application to horticulture of the laws applying to trade marks.

The gold medal of the Congress was awarded to M. Griffon, of Lyons.

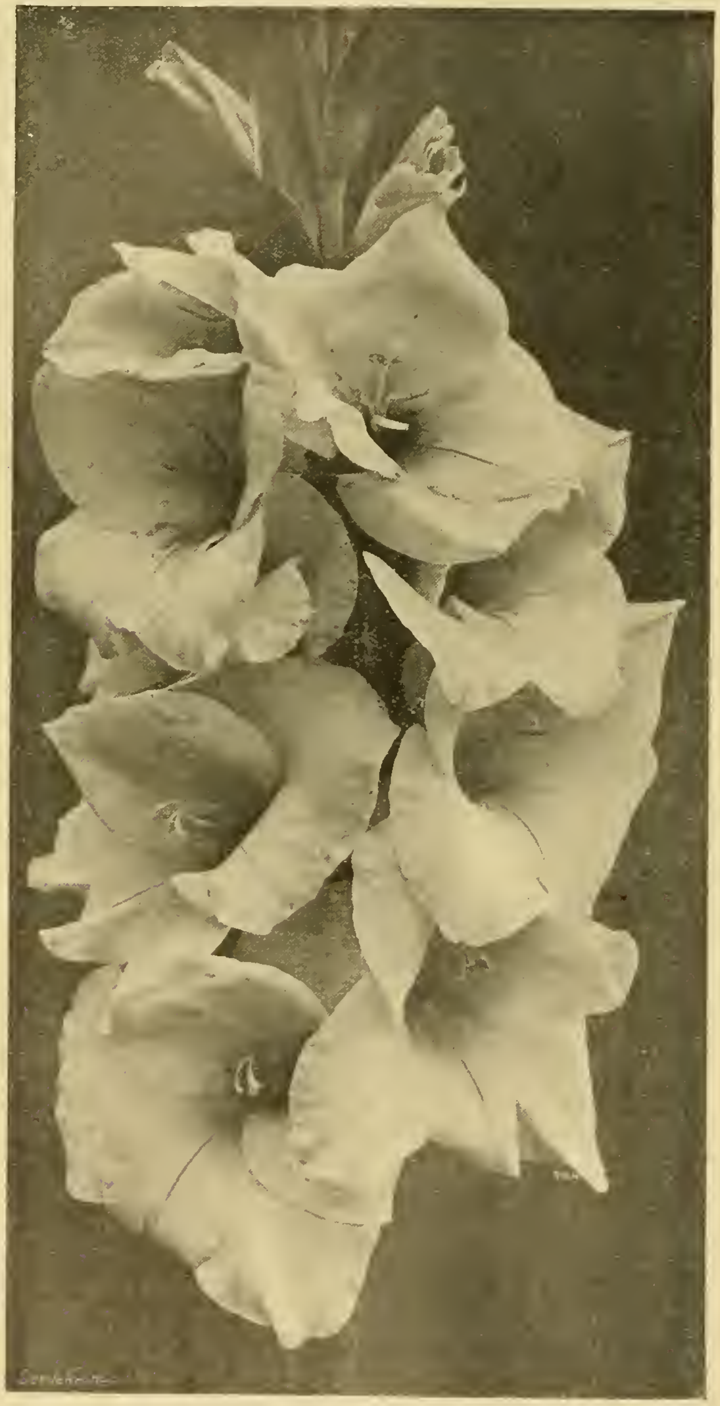


Fig. 46.—GLADIOLUS LOVELINESS; FLOWERS CREAM-YELLOW, SHADED AND STRIPED WITH PINK. Awarded the National Gladiolus Society's First-class Certificate, July 28, 1914. (See p. 101 *ante.*)

In June the rosarian paid his indispensable visit to the rosary of M. Gravereaux, and in this connection it is interesting to observe that by a recent decision of the Conseil d'Etat the commune of Hay has been authorised to assume the name of L'Hay-les-Roses, to celebrate the fact that the famous rosery is situated within its borders. All rosarians know—at all events, by repute—the important collection which M. Gravereaux established in 1900 to serve as a type of the amateur's Rose garden at the beginning of the twentieth century. The collection includes all Roses and all things having reference to the Rose. At the present moment it contains no fewer than 8,000 different types of botanical species and horticultural varieties accurately named and classified. In the museum are a mass of "documents" having reference to the Rose and to its use in science, art and letters. The botanical collection contains rarities such as Rosa berberifolia with simple leaves, and a particularly interesting collection of Roses from the extreme Orient. Of the classes grouped together are ancient Roses, including all varieties of Rosa gallica—the only Rose cultivated up to the end of the eighteenth century; in the horticultural collection are all the varieties of the nineteenth century; the garden of new Roses contains selections from the most beautiful Roses of recent production; my lady's Rose garden, the best varieties for cut flowers, and so on. Nor must I omit to mention the trial garden with glasshouse and laboratory, in which are carried on experiments in the different modes of treatment, manuring and insecticiding. In the section devoted to Roses created at La Hay the results of hybridisations are followed and studied critically. One of the Roses most recently obtained is a pretty hybrid Tea, the outcome of a cross between the Roses Madame Mélanie Soupert and Prince de Bulgarie. It is a superb flower, yellow rose in colour, and named Madame Raymond Poincaré.

All the plants are grouped and classed in the happiest manner, hedges and pergolas provide space for the climbers, and beauty and utility go hand in hand in this celebrated garden. At the seventh international competition of new Roses organised by the city of Paris, which took place at Bagatelle, sixty-six varieties were exhibited. The international jury announced its awards on June 10. The Gold Medal was awarded for the variety Souvenir de E. Guillard sent by M. Chambard, of Lyons. It is a H.T., having for parents Beauté Inconstante and Le Progrès. The Gold Medal of Bagatelle for other than French Roses was awarded to the Rose Mévrouw Dora van Tets, of M. Leenders, Holland. It is a H.T. variety of the parentage Farben Königin and General MacArthur. Four certificates were awarded: (1) To a H.T. unnamed, shown by M. Lambert de Trèves, Germany; (2) Souvenir de Passinge, H.T., shown by M. Chambard, of Lyons; (3) Duchess of Sutherland, H.T., shown by Messrs. Dickson, Ireland; (4) Roby, a multiflora by M. Guillot, of Lyons.

Bagatelle is a charming park of about seventy acres, situated in the Bois de Boulogne and purchased in 1895 by the city of Paris from the heirs of Sir Richard Wallace. In addition to the magnificent rosery installed by M. Gravereaux, it contains an important collection of hardy plants presented by horticulturists of the neighbourhood of Paris, and it has also an interesting collection of Nymphaeas. *A. Meunissier.*

OFFICIAL REPORT ON STATE FORESTRY.*

The first joint annual report of the Forestry Branches of the above Departments, recently presented to Parliament, gives an account of the work accomplished in connection with forestry in England and Wales, and indicates the policy of the Government in this important work. The Report has been compiled by Mr. R. L. Robinson, Superintending Inspector on the Board's staff and head of the Forestry Branches, with the assistance of departmental experts. It is prefaced by an introductory notice by the Secretary of the Board of Agriculture and Fisheries, and by the joint secretaries of the Office of Woods, Forests and Revenues. The preface deals with the origin of the present Forestry Branches, and describes the various steps which led up to the formation of these branches.

---

* *Report of the Forestry Branches of the Board of Agriculture and Fisheries, and the Office of Woods, Forests and Land Revenues for the year 1912-1913.*

The first chapter of the Report is devoted to the "Position with regard to Forestry and Afforestation," under the sub-heading, "Attitude of the State towards Forestry." A brief outline is given of the position of forestry in this country from the Middle Ages to the present time. Considerations are then advanced in favour of an active forest policy. Suggestions are made regarding the means of developing British forestry, under the headings:—"The Improvement of Existing Woodlands," "Afforestation," "Education," "Experiment and Research," and "Advisory Work."

Chapter II. is descriptive of the work of the two branches, 1, in the Board of Agriculture and Fisheries; 2, in the Office of Woods and Forests. In this chapter attention is directed to the work which has already been accomplished or is in progress, such as educational, advisory, experimental and survey work.

Chapter III. is of historical interest as it deals with the management of the Crown forests and woods from an early period to the present date Then follows a chapter describing in detail the 65,766 acres of woodland at present under the control of the Branches, indications being given of the line of management which will be adopted with each wood or forest in the future, and of the work actually in progress.

Chapter V. deals with the "School for Working Foresters in the Forest of Dean" and the "Wood Distillation Works in the Forest of Dean." Both sections are of interest, the former as dealing with a very necessary part of the foresters' education, which in the past has been too often neglected, and the latter as indicating a profitable means of using waste wood.

The timber trade of the United Kingdom is discussed in Chapter VI., and the Report ends with a description of the "Technical Advice in Forestry Matters," which is available for the owners of woods in England and Wales.

The 82 pages of the Report contain a wealth of interesting matter. A map of England and Wales accompanying the Report shows the distribution of existing woods and forests. The Report can be obtained from Wyman and Sons, Ltd., Fetter Lane, London, price 10½d.

BRITTONASTRUM IONOCALYX.

This new attractive herbaceous plant (see fig. 47) has during the past year or two been much admired at the Edinburgh Botanic Gardens.

In the spring of last year Professor Balfour kindly sent me a few seeds, from which half a dozen plants were raised. These were grown in pots throughout the year, and produced seed freely. Besides dividing the plants all available cuttings were rooted, with the result that a batch was ready for planting out this spring.

A very sunny spot was selected, and probably this was a mistake, as the plant is much more attractive after a dull day or two. Another year a more shady spot will be chosen.

At first sight B. ionocalyx bears a resemblance to Cedronella cana, but the colour is several shades lighter, and the plant is much taller in growth, reaching to a height of 3 feet. It is a much-branched, erect-growing plant, carrying a massive central inflorescence of from eight to fourteen crowded whorls of rose-pink flowers. The side growths, which flower with the central spike, add to the decorative value of the plant.

In the seedling stage the leaves are rounded, and are of a metallic purple colour on the undersides. This disappears later, and when fully developed they are heart-shaped, and about 2 inches across. Here in the south at least the plant may be expected to be quite hardy. One plant put out by way of experiment came through the winter quite safely. B. ionocalyx belongs to the Nat. Ord. Labiatae, and is a native of Mexico. *T. Hay, Greenwich Park.*

NOTICES OF BOOKS.

The World's Work in Perfumery.*

Since the publication of Sawer's *Odorographia* there has been no work published in the English language giving an up-to-date account of the growing industry of perfumes derived from plants. This industry has increased by leaps and bounds. The discovery that perfumes resembling those of the Rose, Orange blossom, Musk, Vanilla, and many others, could be made artificially at less expense, and especially those of Violet and Jessamine (the flowers of which will not yield their fragrance by distillation), gave a great impetus to the trade in perfumery, and at the same time the growing use of perfumed soaps caused an increased demand for perfumes of this kind. It was at one time thought that artificial perfumes would oust the natural ones, but it was soon discovered that the perfumes of flowers manufactured in Nature's laboratory were exceedingly complex mixtures, and that the quantities of some of the ingredients were so minute that the only plan was to use the natural in combination with the artificial perfume. Thus instead of destroying the trade in natural perfumes, the actual fact is that there is an increased demand for the latter.

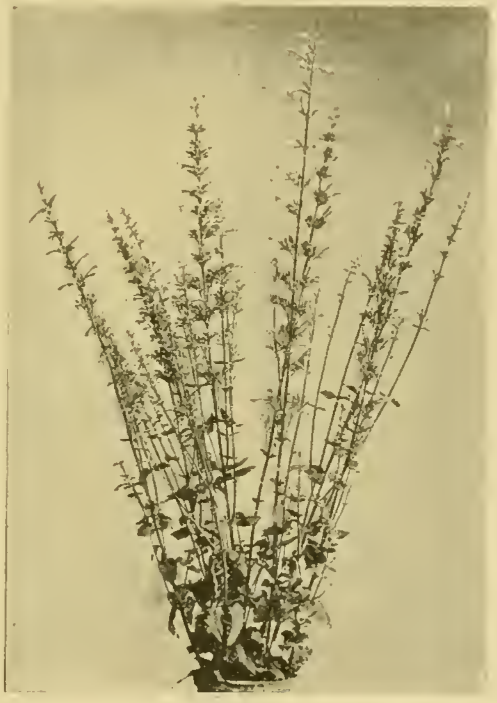


Fig. 47.—Brittonastrum ionocalyx; flowers rose-pink.

About five years ago, Mr. J. C. Umney, who is a well-known authority on the subject of perfumes, started a *Perfumery and Essential Oil Record*, so as to form a permanent record of the growth of the industry in this country, which year by year should focus the literature of all countries on this subject. The *World's Work in Perfumery* forms not only a summary of the advance made in the scientific side of the subject, during the last five years, but brings the statistics up to date, so that it is most useful for reference for trade purposes. The section that will probably appeal to gardeners and lovers of flowers everywhere is entitled "Cultivation Potentialities," a list of the plants and flowers which have not as yet been utilised, though known to possess fragrance.

Doubtless gardeners engaged in botanic gardens abroad could add largely to the list, and possibly contribute information as to possibilities of supply. These lists should also be useful to Government Forestry Departments abroad which may be desirous of developing the natural botanical resources of the country. *E. M. H.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 87-93.)

0, SCOTLAND, N.

Elgin.—There was every prospect of good crops of all kinds of fruit early in spring, but severe frost destroyed Apples, Strawberries, Raspberries, Black Currants and Cherries, with the result that these crops are very poor. *John Macpherson, Mayne Gardens, Elgin.*

Isle of Skye.—The fruit crops generally are very good notwithstanding very severe weather experienced in the first week of June. But the gardens are well sheltered from the north winds and our crops suffered but very little. We are looking forward to a good fruit year. The soil is a heavy brown clay with a good natural drainage, and as it is on an incline and in some parts shallow the crops require a considerable amount of rain. In favourable seasons the gardens yield abundant crops. *Charles Angus, Armadale Castle Gardens, Isle of Skye.*

Nairnshire.—Apples during the flowering period promised to be a bountiful crop, and the weather conditions were favourable for the fruits setting. But on May 25 there were 14° of frost, which did great harm to vegetation generally, and Apples, early Strawberries, and bush Plums in particular were badly damaged. Our soil is a light, sandy loam of a very kindly nature. *David Chapman, Cawdor Castle Gardens, Nairn.*

Ross-shire.—The outlook was promising until May 22, when there was a severe frost over the whole North of Scotland, and nearly all fruit crops were ruined. Consequently both in quality and quantity the crops may be said to be inferior. Peaches, Nectarines and Apricots are grown, but very little out-of-doors in these parts, and Nuts not at all. With regard to small fruits, Black and Red Currants are good in quantity and quality, whilst Gooseberries are plentiful, but not quite so good in quality as in some years. *T. C. Dyer, Tarbat Gardens, Kildary.*

1, SCOTLAND, E.

Aberdeenshire.—The fruit crops were never more promising until May 24, when 8° of frost destroyed much of the earliest blossoms of Strawberries, and also affected Gooseberries and Currants. *James Grant, Rothienorman Gardens.*

—— We experienced unusually severe frosts about the end of May. On the 25th there were 8°, on the 26th 4°, and on the 27th 11° of frost, which did considerable harm to Strawberries and other small fruit. *Simon Campbell, Fyvie Castle Gardens.*

—— The fruit crops are looking exceptionally well, but Strawberries, which also promised well, have not been a success, for severe frost damaged some of the blossom, and owing to a spell of hot dry weather the fruits were small and mildewed. *W. Henderson, Meldrum House Gardens.*

—— Strawberries promised well until the crop was spoiled by unusually severe frosts on May 25 and 27. Singularly, with this exception the fruit crops generally did not suffer harm from spring frosts. *John McKinnon, Haddo House Gardens.*

Banffshire.—The fruit crops are very poor, although the prospects were of the brightest until May 25, when we experienced 11° of frost, which completely ruined them. Apples are practically nil, and Plums and Cherries are almost as scarce. The only fruits that are average crops are Gooseberries, Raspberries, and Black and Red Currants. *George Edwards, Ballindalloch Castle Gardens.*

—— Owing to frosts in May and June the crops of Plums and Apples were much damaged, whilst Strawberries were also badly injured. The long spell of dry weather also greatly affected the Strawberry crop, for mildew resulted. Taking the fruit crops generally, they are more than a week earlier than last year. The soil is clayey. *Geo. Ogg, Netherdale House Gardens, Turritt.*

---

* A special number of the *Perfumery and Essential Oil Record*. (J. C. Umney, F.C.S., 8, Searle Street, London.) Price 1s. 6d.

Berwickshire.—Small fruits are excellent, especially Black Currants, which do well in this district, and the bushes are free from big bud. Strawberries were good, but most of the berries were inferior owing to the long period of drought, which in our case was very pronounced, seeing that the subsoil is gravel and the soil of a light nature. I have never seen Cherries more plentiful, especially the varieties May Duke, Late Duke, and Elton. Plums are good; we grow a few varieties, but none is superior to Jefferson. Pears are scarcely worth growing in this district, but Apples do well, especially Bramley's Seedling. *Peter Smith, Duns Castle Gardens, Duns.*

—— The fruit crops are very good. Apple and Pear trees carry good average crops. The former at flowering season gave promise of abundant crops, as the trees were smothered in blossom, but many of the flowers did not set, probably on account of low night temperatures and excessive drought. Plums and Cherries on walls have abundant crops. Early Cherries, such as Early Rivers and Elton, from which we are at present picking very fine dishes of large-sized fruits of fine quality, are splendid. Later Cherry trees, too, carry very heavy crops. Small fruits, such as Gooseberries, Black and Red Currants, and Raspberries, give promise of enormous crops. Our Gooseberry bushes are borne to the ground with the weight of the crop. Strawberries also fruited abundantly, giving berries of specially fine quality and flavour. The warm, dry weather was favourable to Strawberry crops on heavy land, but later fruits were smaller owing to drought. Our soil is a red loam on clay. *Robert Stuart, Thirlestane Castle Gardens, Lauder.*

Fifeshire.—The Apple crop promised very well when the trees were in bloom, but the flowers did not set well. Pears are extra good and well advanced for the season. Plums are almost a failure. Currants, Raspberries and Gooseberries are all large crops, and the fruits are of good quality. Strawberries from young plantations were very good. *D. McLean, Raith Gardens, Kirkcoldy.*

Forfarshire.—There is a great shortage of Apples in this district. Standard trees developed little or no blossom, but wall trees have an average crop. On May 25 there were between 10° to 12° of frost, which proved disastrous to several of the small fruit crops. Damsons, Black Currants, Gooseberries and Raspberries suffered most, and the trees have only half the crop they were carrying previous to that date. The soil is a loam on a sandy or gravelly sub-soil. *Andrew McAudie, Ruthven House Gardens, Meigle.*

Haddingtonshire.—With the exception of Strawberries there are abundant crops of all fruits, and even Figs and Almonds are cropping satisfactorily. There is a slight infestation of red spider on Apples, but, as a rule, all kinds of fruit possess clean and large foliage. There is evidence that both Apples and Pears will be highly coloured. I hear of Raspberries as well as Strawberries being short crops, but the latter alone have here regrettably failed. *R. P. Brotherston, Tyninghame Gardens, Prestonkirk.*

Kinross-shire.—There was an early promise of very heavy crops of all kinds of fruits, but they have been reduced to average quantity by the long spell of dry weather in June and July. The soil is very light and sandy. *R. Fraser, Kinross House Gardens, Kinross.*

Midlothian.—We have remarkably good crops of all kinds of fruit. Apples are very plentiful; the fruits are swelling fast. Pears on certain varieties required thinning. Plums are an exceedingly heavy crop, including the varieties Czar, Diamond, Goliath, Grand Duke, Victoria and most of the Gages. Cherries are plentiful, but sweet Cherries were slow to ripen, I expect from want of rain. The crop of Apricots surpasses all previous experience. It has needed a continual thinning since the fruits set. Small fruits are enormous crops. Gooseberries especially are plentiful and the berries large and fleshy. Black and Red Currants dried on the points a little during a spell of extra dry weather, but that has improved the quality of the main crop. Strawberries were good, quite surpassing expectations. Although short of moisture all through the year our soil is deep, loamy and rich, and if a fair amount of rain falls early in the season all crops grow well for a long time. *Benjamin B. Ness, Oxenfoord Castle Gardens, Ford.*

—— Fruit trees of all kinds developed an unusual quantity of blossom, and during the flowering period the weather was warm, dry and genial, with an absence of frosts. Pears are a heavy crop; early varieties of Apples are plentiful and late varieties a good average crop. Orchard trees of Victoria and Pond's Seedling Plums are bearing excellent crops. Gooseberries, Black and Red Currants are heavy crops. Strawberries were much under the average, and this I attribute to drought last summer. The soil is light and sandy on a gravel sub-soil. *James Whytock, Dalkeith Gardens, Dalkeith.*

Morayshire.—The fruit crops in this district are all clean and healthy. Severe frost on May 25 destroyed the early Strawberry blossom, and the heavy crop of Apples last season accounts for a scarcity of this fruit. *C. Webster, Gordon Castle Gardens, Fochabers.*

Peeblesshire.—The fruit crops generally are of excellent quality, especially Strawberries and small fruits. We were fortunate enough to escape injury by frost. We, in consequence, expected good crops, and they are not only good but very heavy. The shoots of Gooseberry and Black Currants have needed staking to keep them from being borne to the ground by the weight of the fruit. The foliage is free from aphis. Plums, Gooseberries, Raspberries, Strawberries and Black Currants are the most reliable fruits for this locality. *Alex. J. McDonald, Darnhall Gardens, Eddleston.*

Roxburghshire.—The crops in this district suffered from prolonged drought, and in consequence certain fruits have not done so well as they promised. This applies especially to Strawberries, which suffered much from want of rain. The soil is of a light, porous nature. *W. Choplin, Springwood Park Gardens, Kelso.*

Selkirkshire.—Apples are a very fine crop, whilst Plums are the best crop I ever had and the fruits are of extra good quality. There was no frost at the time they were setting. We had a fine crop of May Duke Cherries on a south wall, whilst Morello Cherries on a north wall are excellent. All small fruits are bountiful crops and the quality is extra good. The soil is rather light in texture and poor in quality. *John C. Lunt, Bowhill Gardens, Selkirk.*

6. SCOTLAND. W.

Ayrshire.—Small fruits are all good crops. The month of June was the driest on record here. Raspberries are ripening, but the fruits are small. Late Strawberries will be small also, but Royal Sovereign has never been better. Plums are an extra good crop. *W. Priest, Eglinton Gardens, Kilwinning.*

—— The fruit crops are most satisfactory. Apples, Plums and Peaches are so plentiful that the fruits have had to be thinned severely. This I attribute to a great extent to the almost entire absence of frosts in April and May; spring frosts often cause considerable damage in this county. Strawberries and other small fruits are of first-rate quality, but will soon be over owing to the hot, dry weather. Caterpillars have been troublesome, but otherwise insects have not been so numerous as usual. *D. Buchanan, Bargany Gardens, Dailly.*

Buteshire.—Most of the fruit crops suffered considerably from want of rain in June, and in particular early Strawberries on light soils. With rain in the early part of July late Strawberries recovered greatly and the berries were of good quality. *D. Halliday, Ascog.*

Dumbartonshire.—The fruit crops are a good average. There were no severe frosts in spring, and Apples, Pears and Plums did not suffer damage from cold, although the crops would have been better except for heavy rains. Raspberries were harmed by a storm when the first flowers were expanding, but they recovered exceptionally well. Strawberries were a very heavy crop. *D. Stewart, Knockderry Castle Gardens, Cove.*

Dumfriesshire.—Strawberries and Raspberries are abundant and good. Apples and Plums are both fair crops, whilst Gooseberries, Black and Red Currants are both average crops of good fruit. Apricots are scarcer than usual, but the fruits are of good quality. *John Urquhart, Hoddom Castle Gardens, Ecclefechan.*

—— Apple trees flowered profusely, but the crop is disappointing. Pears also flowered well and the crop is heavier this year than for several seasons past. Plums are a fair average crop, but the variety Victoria has a tendency to gum. Early varieties of Cherries were very good, but Morellos are not quite so satisfactory. Small fruits are very good, and of these Red Currants are the heaviest crop. Strawberries were extra plentiful, but the berries of certain varieties were a little deficient in size owing to want of rain. The soil is light, being a sandy loam. *James McDonold, Dryfeholm Gardens, Lockerbie.*

Kirkcudbrightshire.—All fruit trees had a splendid show of blossom, and the fruits set fairly well, for the weather was favourable. But the crops have suffered somewhat from the absence of rain, and especially Strawberries. There are large crops of all wild berries and Nuts. The soil is rather wet and cold, and therefore not favourable to the cultivation of dessert fruits. *D. Wilson, Gairnsmore Gardens, Polnure.*

Renfrewshire.—The crops in this district, with the exception of Pears, which were destroyed by spring frost, are remarkably good, and especially small fruits, which have not suffered from drought. At the time of writing the long-continued drought is injuriously affecting the larger fruits. Our soil is very deficient in lime, and varies from sandy to heavy clay. *R. D. Smartt, Berochan Gardens, Houston.*

2. ENGLAND, N.E.

Durham.—The fruit crops are very disappointing, notwithstanding that Apples and Pears were very promising and healthy up to May; then we experienced frost, and the weather was too dry and cold for the flowers to set, and most of the few fruits that did form dropped later. *W. Smith, Lambton Castle Gardens.*

Northumberland.—The fruit plantations in this county are limited in area but freely distributed. Though some are on heavy soils, the majority are on sand overlying millstone grit, and on alluvial deposits. Bush fruit is the best crop. The abundant sunshine and high temperatures have ripened bush fruit and Strawberries two weeks earlier than was the case last year. The famous Alnwick Strawberries have been abundant and of good quality and colour. Pears, chiefly of the varieties Hazel and Jargonelle, are good at Hexham and Morpeth. Plums are patchy. Apart from Bramley's Seedling all varieties of Apples at the County Council experimental station, Cockle Park, are bearing an average or more than average crop. *C. W. Mayhew, Morpeth.*

Yorkshire.—All hardy fruit trees bloomed well, and, until the disastrous frost on May 1 the fruit crops bade fair to be phenomenally good. Several frosts in succession did further harm, but even then fair crops would have been obtained in sheltered districts. Then came the most destructive frost of all on the morning of May 26 and all prospects of a good fruit year vanished. In the smoke screen bush Apples on the paradise stock are carrying fair crops. Wall Plums also escaped injury to some extent. Strawberries and Raspberries came through much better than could have been expected, although the crops were comparatively light on account of the long period of drought in May and June. In some cases Gooseberries in sheltered districts are carrying very large crops where the bushes have been allowed moderate extension; spur-pruned bushes have failed. *A. S. Galt, Rutherglen, Roundhay, Leeds.*

—— Apples, Pears and Plums are failures, for only in a few sheltered places are there any of these fruits. Pears and Plums on wall trees are good, and small fruits also are satisfactory. There was an abundance of blossom, but frosts late in May spoilt what would have been a big crop of Apples, Pears and Plums. The soil is a heavy loam with a layer of clay, and below red sand. *Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.*

—— In the early spring there was great promise of large fruit crops all over Yorkshire. Fruit trees and bushes of all kinds blossomed heavily, but the late spring frosts caused great damage, especially in gardens situated in vales, small fruit generally escaping. At higher altitudes the damage was not so great. Apples suffered greatly. The early branch growth of Walnuts with the flowers was in most places killed back to the old wood. The earlier flowers of Strawberries at the lower altitudes were killed, but the later ones escaped. *Alfred Gaut, The University, Leeds.*

—— All fruits, excepting Pears and Raspberries, are average crops. On May 2 we experienced 14° of frost, which did considerable damage: Raspberries were cut down; Plums, which had set abundantly, were cut off on exposed trees, but others on a north border are well fruited. Apples are an average crop; the best-fruited varieties are James Grieve, Worcester Pearmain, Ecklinville Seedling, Keswick Codlin, Lewis's Incomparable, Allington Pippin and Grenadier. Raspberries and Pears are failures. Gooseberry bushes are very heavily cropped. Strawberries have been very good, but smaller than usual. Fillbasket and Bountiful are our best varieties. In some gardens within a few miles from here the hardy fruit crop is a complete failure. *A. E. Sutton, Castle Howard Gardens, Welburn.*

—— The Strawberry crop is the worst for many years, for frost damaged most of the blossom. Pears are not as plentiful in other gardens here as in our own; we seem to have escaped the worst damage by frost, although we experienced 10°. The Potato haulm was cut down when just out of the ground, but the stems grew again, and now, after warmth and rain, Potatos promise well. If this district is any index to the Apple crop these fruits will be scarce. Insect pests are more prevalent than usual owing to the mild winter. *J. G. Wilson, Chevet Park Gardens, Wakefield.*

—— The fruit prospects in the early stages were very promising, but the crops were damaged by spring frosts. On May 2 we registered 10° of frost; Pears and Plums in the open which had just set were frozen, and many on walls were also injured. Apples were just opening their flowers, and these were badly damaged; the only variety carrying an average crop is Lord Grosvenor. On May 26, when Raspberries and Strawberries were in flower, we registered 9° of frost, which seriously damaged these fruits. The gardens are 100 feet above sea level and the soil is sandy. *F. C. Puddle, Scampston Hall Gardens, Rillington.*

—— Early in spring there was promise of an exceptionally good fruit season, but severe frosts early in May spoiled the prospects. Plums, Apples, Pears, Strawberries and Raspberries suffered very much, and these are poor crops. Cherries, Gooseberries and Red Currants are very plentiful, whilst Peaches and Apricots are abundant crops. *C. Fulford, North Riding Asylum, York.*

—— The hardy fruit crops are under average with very few exceptions. The trees generally and Apples especially flowered magnificently, but the good prospects vanished rather suddenly, for severe frosts destroyed the majority of the blossom and the frosts were followed by cold N.E. winds and low temperatures. These sudden transitions from heat to cold stunted and checked growth, which caused the trees to become much infested with caterpillars and other insects, and together these completed the damage. *F. Jordan, Warter Priory Gardens, York.*

3, ENGLAND, E.

Cambridgeshire.—The fruit crops generally are good. A certain amount of damage was done by frost to the Plum and Pear blossom, but it was not so great as was at first feared. Scarcely any Nuts are grown, with the exception of the Walnut, and of these there is an average crop. *A. Sewell, The Palace Gardens, Ely.*

—— Apple trees blossomed well, but late frosts destroyed most of the crop. Exceptions are the varieties Red Victoria, Lord Grosvenor and Stirling Castle, which are fruiting well. Late varieties generally have under average crops. The Pear crop is the lightest for seven years. Victoria Plums are a good average crop, but there is only a light crop of Czar. Paxton Strawberries even at this date (July 4) are a very heavy crop. Raspberry Superlative is short in the cane and the crop is one-third below the average. Walnuts on trees in old grass lands are not so plentiful as last year. *Stephen Castle, Walpole St. Andrew, Wisbech.*

—— We have good crops with the exception of Apples; some Apple trees have not a single fruit. Although our Black Currant bushes were very badly attacked by big bud we had a very heavy crop of these fruits, and Red Currants were also plentiful. All other fruits are doing well except that green fly is very prevalent on the plants. Our soil is heavy and seems to suit all kinds of fruit. *Herbert Head, Hatley Park Gardens.*

Essex.—The fruit crops are satisfactory, and the growth of the trees is remarkably good and clean. Apples are not such an abundant crop as the amount of bloom forecasted, but this is balanced by good, clean, healthy growth. Pears are unusually plentiful and the crop has required much thinning. Peaches, Apricots and Nectarines are all abundant. Plums, with the exception of wall trees, are very lightly cropped. The fruits set well, but just as the petals dropped we registered 4° of frost. With this exception spring frosts did no harm whatever. Small fruits without exception are extremely good. Our soil is a strong yellow clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

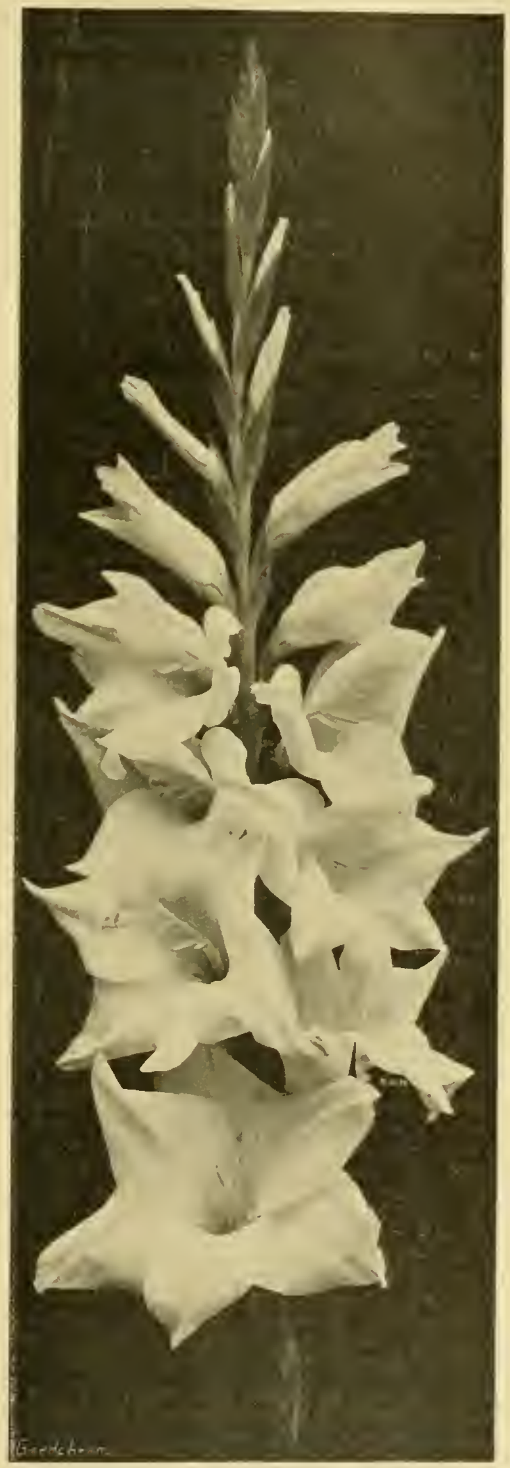


Fig. 48.—Gladiolus White Giant.

(Award of Merit National Gladiolus Society, July 28, 1914—see p. 101 *ante.*)

—— This is the worst all-round year of hardy fruit experienced in this district during the last eighteen or twenty years. The show of blossom was promising, but May frosts thinned the blossom very severely, and the tropical heat and drought which prevailed throughout the month of June caused large numbers of the fruit that did set to fall. The one Apple tree that has anything approaching a full crop is King of the Pippins variety. Pears are more plentiful than Apples—that is, some trees of the earlier varieties, such as Williams' Bon Chrêtien, are carrying light crops. The soil is a rich loam and the situation slopes to the south—ideal conditions for fruit and flower culture. *H. W. Ward, Lime House, Rayleigh.*

—— Apples flowered fairly well, but owing to drought many of the young fruits dropped. Pears were not damaged so much and we have a very good crop. Plums, such as Early Rivers, Victoria, and Damsons are well cropped in places. Cherries are very good, but owing to drought birds were very troublesome to these fruits. Peaches, Nectarines and Apricots are fairly good. All small fruits are an abundance. There seem to be very few Nuts in this district. *W. Johnson, Stansted Hall Gardens, Stansted.*

Huntingdonshire.—Apples set very freely, but many fruits dropped owing to a deficiency of rainfall during April and May; less than 1½ inch fell during the two months. Apricots and Peaches are exceptionally heavy crops. We registered 4° of frost on three nights in the last week of May, but no damage was done to fruit, although Potatos, which are grown extensively in this district, were very badly damaged. *A. V. Coombe, Ramsey Abbey Gardens, Ramsey.*

(*To be continued.*)

FLORISTS' FLOWERS.

DARWIN TULIPS.

The Darwin Tulips are far ahead of the early-flowering sorts for bedding, as the collection of about two thousand in these gardens has amply proved. The one which I find stands wet weather and high wind best is Clara Butt, a delicate salmon-rose. Pride of Haarlem, also salmon-rose, is another excellent variety; it grows here to a height of 28 inches. Salmon King is a strong variety, and keeps well for a long time. Glow is a good crimson flower; the stems are somewhat tough, which is an advantage, as they are more durable than the sappier stalks. Donders is dark vermilion. Glory is a fiery scarlet, and stands well when cut. La Tulipe Noire is a handsome variety, and the darkest of all, but it does not last well, as the petals open very quickly, and the rain gets inside, causing them to drop. Valentine is one of the best light violets. Edmée is a cherry-coloured flower, which will not bear exposure to the full rays of the sun at mid-day without loss of colour. Whistler is a rich, blood-red variety, one of the best for bedding and supplying cut blooms. Flambeau is a brilliant scarlet, but not quite so bright as Whistler. Fairy and Gustave Doré are two cerise varieties of which the colour is rather delicate, and should not be planted in full sun. Bartigon is carmine-crimson; Velvet King is deep purple in colour, and stands adverse weather conditions considerably better than La Tulipe Noire. Here it grows to a height of 30 inches. La Tristesse is a bright violet-blue flower. Mrs. Farncombe Sanders is one of the best crimson-scarlet varieties, and the largest: but it has a rather drooping head. Landette is of a bright, rosy-pink colour, and should not be planted in too exposed a position. Mme. Krelage is a soft lilac variety, which lasts well. Nauticus is bright, purplish-rose; it is a strong variety, and will stand bad weather. Margaret is a lilac-rose, and one of the best of its colour. Princess Juliana is salmon-red, tinged with orange. These varieties comprise the best of the Darwins for general use. *E. F. Hart, Hockley House Gardens, Twyford, Winchester.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Cypripedium niveum.—This Orchid is not considered one of the easiest to cultivate, yet where the conditions are suitable but little difficulty is experienced with it. The plants succeed best in a warm intermediate house. During the season of active growth and throughout the summer, when the plants are in flower and rooting actively, they require liberal supplies of moisture at the roots. It is best to dip the pots in a pail of water up to the base of the plants, thereby wetting the compost thoroughly, and at the same time preventing water from lodging in the growths and axils of the leaves. Late in autumn and during the winter only sufficient moisture is needed to keep the foliage plump. During the winter there is almost sufficient humidity in the atmosphere of the house to keep the plants healthy. The roots should not be disturbed often, and for this reason it is best to employ compost of a lasting nature. Two parts turfy loam and one part fibrous peat, freely intermixed with old lime rubble, will provide a suitable mixture. The soil should be made firm about the roots of the plants. For drainage use principally lumps of old mortar, and the material should fill about two-thirds of the pot. The best time for repotting is immediately after the plants have done flowering, for then the new roots are not far advanced and not likely to be damaged. Remove all dead and decaying matter from the bases of the plants and among the roots, and place the growths together as near to the centre of the pot as possible. Afford water with extra care after re-potting, and see that moisture dripping from the roof does not fall on the foliage.

Raising Seedlings.—Cypripedium niveum has not been used as a seed parent so extensively as one would have expected, for, with very few exceptions, hybrids of this plant have always been of merit. The seeds are not the easiest to germinate; they germinate best when sown on the surface of the compost in which older plants of C. niveum are growing. They require from nine to fifteen months to germinate, but the seedlings make rapid growth after the first leaf has developed. The plants should not be removed from the seed-bed until they have formed their second leaf.

Cypripedium Venus.—The better forms of this hybrid are the more vigorously growing. Repotting is best done at the present time, for new roots are developing. Some of the plants may need to be divided, and this may be done at the time of re-potting. Let the pots be well drained; a similar compost to that recommended for C. niveum will be suitable, but a little chopped Sphagnum-moss intermixed will add to the appearance of the plants. Make the compost firm about the roots and afford shade for some time after re-potting.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Pruning Hedges and Shrubs.—Evergreen and deciduous hedges may be pruned; the former will have sufficient time to make new growth before the winter. Attend to all shrubs, specimen Yews and other Conifers, with a view to removing unshapely growths and weak shoots. If this annual pruning and trimming is carried out neatly and regularly the trees and shrubs will scarcely show that they have been pruned at all, whilst the plants will flower better in each succeeding year and keep in a good condition of health.

Spring Flowers.—Prick out thinly plants raised from seed and do not allow them to become drawn. Calculate the number of each kind of plant required and do not grow more, beyond a few for replacing failures, as a limited number of stocky plants is preferable to a large quantity of inferior ones. This applies to such kinds as Myosotis, Wallflowers, Alyssum saxatile compactum, Aubrietias and Polyanthus. Brompton Stocks, Campanula pyramidalis, and C. calycantha required for pot culture or planting in borders require similar attention.

Violets.—The present season has been an ideal one for Violets, which are clean and free from red spider. Spring-planted runners are forming strong, healthy crowns and promise to produce large flowers. Hoe the soil regularly and feed the roots with a concentrated fertiliser, alternated with soot or liquid manure. Remove any runners that appear, as these would weaken the parent plants.

Violas.—Remove the seed pods to throw all the strength of the plants into the shoots for cuttings, which should be inserted in a cold frame in sandy soil, in which they will root freely and make good plants for spring blooming. A good variety is Bullion, but it does not do well in all gardens.

Reserve Garden.—The reserve garden is an important section of the establishment, for it provides material to keep the dressed grounds attractive throughout the summer. It should contain a surplus stock of pot plants of such subjects as Liliums, summer-flowering Chrysanthemums, Celosias, including Cockscombs, also Fuchsias, which can be easily transferred to the beds to take the place of other plants passing out of bloom. Many hardy herbaceous and rock garden plants that have ceased to flower may be pulled to pieces and each portion with a single crown replanted in good soil in the reserve quarters. They will soon make healthy plants. It is a good plan to select a few of the best-habited and most floriferous tender bedding plants, such as Heliotrope and Ageratum and to retain them specially for furnishing cuttings.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Statice Suworowii.—This beautiful flowering plant succeeds admirably in pots, and is splendid for conservatory decoration. The lilac-coloured and pink flowers are borne in profusion on spikes 18 inches long, and are suitable for room decoration. We have a batch in flower on plants raised from seed sown in January. Plants of a later batch promise well for flowering in October and November.

Hippeastrum (Amaryllis).—The more forward plants are completing their growth, and do not require frequent waterings, but air should be admitted freely. As the leaves wither place the pots out-of-doors on their sides with the bulbs facing the sun. This treatment only applies to plants maturing during August; those of later batches should be ripened in a frame, admitting an abundance of air and exposing the bulbs to full sunshine. One- or two-year-old plants do not require a rest during the winter, but should be kept growing in a moist atmosphere in a temperature of 65°.

Ixora.—The plants are flowering freely and should be placed in a shaded part of the stove-house to prolong the flowering season. Feed the roots with liquid manure and supplement with a concentrated fertiliser. After the plants have flowered allow them to rest for a few weeks and then prune them into a good shape. When growth recommences repot the plants in a mixture composed of equal parts of turfy loam and peat, with charcoal and sharp sand added. Young plants should be repotted directly they have flowered, plunging the pots in a hotbed in a house with a temperature of 75°.

Pelargonium.—Prune Pelargoniums that have been standing in the open, retaining only the best plants. Cut back the shoots to within about 2 inches of the main stem. Stand the plants on an airy shelf or in a frame, and syringe them daily to induce strong shoots to form. When growth commences shake the soil from the roots and repot in receptacles only just large enough to contain the roots, as the plants winter best when root-room is limited. The roots will not need water if the soil is fairly moist until fresh ones form, but spray the top-growth regularly. At the time of pruning select suitable shoots for cuttings and insert them in small pots. If green fly is troublesome dip the foliage in quassia extract.

Schizanthus.—Sow seed now to raise plants for spring flowering. Soil for the seed bed should consist of one part loam and half-a-part each of leaf mould, sand and decayed manure. Let the pots or pans be well drained. Germinate the seeds in a cool frame, and transplant the seedlings when large enough for transference into 3-inch pots, and winter the plants on a greenhouse shelf. Afford water only when moisture is absolutely necessary.

Liliums.—Now that retarded bulbs can be purchased for late flowering it is an easy matter to have Lilies in bloom the whole year round. Varieties suitable for this treatment are Lilium auratum, L. longiflorum, L. lancifolium album, L. l. rubrum, and L. l. Melpomene. In order to have Lilies at Christmas and the New Year, pot bulbs of L. lancifolium and its varieties without delay; L. auratum and L. longiflorum may be potted a week or two later. Use a compost made of equal parts loam, peat, decayed manure and sand. Place three or four bulbs in each 9-inch pot, which should be half filled with compost. Barely cover the bulbs with soil to allow ample room for top-dressing them later. Stand the pots in a cool frame and cover the glass with mats until growth commences, when the plants may be removed to a cool house. When the growth is about 1 foot high top-dress the roots and, as the latter fill the pots, afford more heat, but do not attempt undue forcing until both root and stem are well advanced.

The Weather.—Although drought has been widespread, we registered during the month of July 4.70 inches of rain; rain fell on nineteen days.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Figs.—Early Fig trees growing in pots are now well advanced, and the wood should be nearly ripe; it must not be taken for granted, however, that the wood is sufficiently matured because some trees have partly cast their leaves. Select a warm, sunny position under a south wall, and plunge the pots to their rims in a bed of ashes or similar materials. If the pots are left exposed it will be necessary to water the roots more freely, and it is not desirable to afford more moisture than is necessary to keep the wood and buds plump and the foliage from drooping. Endeavour to grow the trees slowly, for undue stimulation of growth is harmful to good results. Trees of such varieties as Pingo de Mel, an excellent variety producing a good second crop, may require shifting into larger pots. The compost should consist of good, fibrous loam, a small quantity of well-decayed manure, or dried cow manure, and a liberal sprinkling of old mortar rubble and bone meal. Pot firmly, and keep the soil moderately moist. Should the foliage show the least signs of flagging, syringe the leaves with soft water both morning and evening until the trees are re-established. Give every encouragement to late varieties, such as D'Agen, Nubian and Negro Largo, to swell their fruits. Maintain a fairly high temperature—using the hot-water system if necessary—and sufficient ventilation to prevent a stagnant condition of the atmosphere. Water the roots copiously until the fruit has matured, when the treatment must be modified, or the successful ripening of the wood will be retarded. Watch closely for any signs of red spider, scale or mealy bug, and deal with the pests immediately any are detected.

Pineapples.—When the fruits have all been cut a general rearrangement of the plants is necessary. Remove the old plants that have perfected their suckers, twist off and pot the latter, and grow them in a frame or pit. Fill up the bed vacated by the old plants with fresh fermenting materials, and put everything in proper order for the autumn. Select a sufficient number of plants from those in the succession pit to fill the fruiting pit again. If a further batch of plants is required to fruit this autumn, specimens that are sufficiently advanced should be chosen, but if the pit is to be utilised for the growing of successional plants, examine the latter carefully with a view to repotting any that need increased root room before they are arranged in the pit. After the plants are potted, plunge them in the bed which has been prepared for them. It is undesirable that they should at once form fruits, but if ripe Pines are required in February and March, give the plants plenty of room—not less than 18 inches from the centre of one pot to that of the next. Attend to the watering with strict regularity, and keep the plants growing steadily in a temperature of about 80° by day—90° with sun heat—and from 68° to 75° at night.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Strawberries.—Nets that have been in use over the Strawberry beds should be removed when thoroughly dry, and, if not required for other crops, tied up neatly, labelled, and stored in a perfectly dry place. Old Strawberry beds that are exhausted should be destroyed, and the ground utilised for some other crop. It is a good plan to cut off the plants and burn them together with the litter and rubbish, choosing a dry day for the work. The ashes may be spread over the ground, as they have considerable manurial value. Plants grown especially for furnishing runners produce offsets much earlier than the ordinary plants in the beds, and if the layers were secured early, the young plants are sufficiently established in their pots to be severed from the parent plants. First water the plantlets, and, after severing them, stand them in the shade until they have recovered from the check. In hot weather syringe them overhead occasionally to prevent the foliage from flagging. They will then be in a suitable condition for planting, and there is considerable advantage in planting Strawberries early. To procure fruits early in the season the plants should be grown on a warm border and in rich soil. Borders such as are cropped with early vegetables are suitable, and the ground needs but little preparation to bring it into a suitable condition for the Strawberries, as usually it has been well manured for the previous crop. Wood ashes and soot may be spread over the surface, the ground lightly forked, and afterwards levelled. These early plants will furnish berries a week or two in advance of the main beds, and are valuable in maintaining an unbroken supply after the indoor crop is over. Strawberries grown in the open are always the best flavoured. For an early supply it is best to crop the plants one season only, and to form a fresh bed each year, for young plants always produce the earliest fruits. Strawberries grown in this manner may be planted much closer than those in the beds; a space of 15 inches apart is suitable.

Permanent Beds.—When these early sets have been planted and as soon as ground is available the main plantations should be formed. When preparing ground in winter for the various crops it is a good plan to trench and manure land for planting early Potatos, with a view to using it afterwards for Strawberries. The Potatos will be dug in good time for planting the Strawberries. Very little preparation will be necessary, beyond levelling the surface, dusting it with wood-ashes and soot, and raking off the larger stones. Plant firmly, and see that the crowns are level with the surface, for they must not be buried even an inch or two. Spread out the roots evenly, make the soil firm, and water the roots. All runners must be removed as they appear, and the ground made clean by repeated hoeings.

Black Currants.—If the work has not been done already the pruning of Black Currants should be no longer delayed. It is a mistake to defer the pruning until the winter. In well-established bushes cut out the bulk of the old wood, leaving the strong new shoots springing from the base to take their places. Young trees will not require quite so much pruning as older specimens, but nothing is gained by allowing weak and spindly shoots to remain. Unhealthy bushes may be sometimes quite renovated by cutting them completely to the ground level.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Leeks.—The main batch of plants is sufficiently advanced to have soil drawn to the stems. Leeks will grow very rapidly from now onwards, and especially will this be the case if the ground be dressed with a fertiliser.

Peas.—Guard carefully against attacks of thrips, which ruin late Peas if permitted to spread. Lavish washings with soapsuds strengthened with paraffin oil, or with Lifebuoy soap, are excellent to destroy thrips and prevent mildew. In dry weather the roots may need watering, but the rule to grow Peas as naturally as possible is a good one, the haulm thus grown withstanding the vicissitudes of the weather late in the season much better than when stimulated at this period.

Spinach.—A large breadth of ground should be set apart for this important crop, which may be sown at once, to produce leaves for use in winter and spring. If grown on land recently cropped with Potatos the ground will merely need to be cleaned, levelled, and if necessary lightly forked to provide a suitable seed bed. In dry weather it is essential to moisten the soil thoroughly in order to assist germination. Thin seeding is important, and the rows should be wider spaced than for summer sowings. Make another sowing in three weeks' time.

Jerusalem Artichokes.—The stems of these plants grow so tall here that it is found good practice to cut off the tops, which helps the plants to withstand the force of autumnal gales. If this is not done considerable numbers are blown down, bringing up many of the partially grown tubers.

Potatos.—Nothing is gained by leaving Potatos in the ground after the haulm begins to turn yellow and wither. Indeed all, with the exception of later varieties, may be lifted as opportunity occurs, selecting seed tubers from the best plants.

Autumn-Sown Onions.—It is time to consider the question of raising Onions for use next summer, but it depends upon local conditions whether the seeds be sown at once or at a later period. Given a "free," finely-prepared bed for the seeds, it is better that the soil be not too highly manured. Make the drills rather broad, and scatter the seeds not too closely therein so that there will be a good crop of plants in each row without overcrowding or need of thinning later on. Manurial assistance may be afforded if necessary next spring. Early Onions are approaching maturity, and every care must be exercised when the plants are ripening that they do not start into growth afresh when the weather is wet. The main batch may be expected to mature in September, and the plants will need no attention meanwhile unless fungus attacks the foliage, when, on the first appearance, they should be sprayed at once with Gishurst Compound or lime-sulphur. Those badly affected should be destroyed forthwith.

THE APIARY.

By Chloris.

Honey.—Those whose bees have not died have reaped a good harvest in most places, and the prospects of more honey are good. It is well to warn beekeepers against the folly of parting with honey at low prices. Sections are being retailed in first-class shops at 1s. 3d. each, and those not of the highest grade. In sending away orders never forget to be strictly honest in the grading if you wish to retain your customers and extend the connection. Let all the sections be equally well filled, even in colour, and well sealed.

Next Season.—In their eager desire to get all they can during the short bee season too many beekeepers fail to remember that another year has to be taken into consideration if uniform success is desired. Now is the time to re-queen, for upon the fertility of the queen success depends, and usually a second season queen produces the best results. Still there are considerations other than egg-laying to be considered in selecting the future mother of any colony. The queen should have been produced from a stock, the inmates of which are easy of manipulation, for bad-tempered bees should be eliminated as far as possible, and this quality is generally supposed to be derived from the male. Again, some colonies are noted for the amount of propolising they do, and these should be avoided, and preference given to those which use little. Non-swarming is a trait that should be cultivated, and it can be, by judicious selection, for a busy man loses many swarms when he is from home all day. Some bees work earlier and later than others, and queens from these are likely to perpetuate this quality. From this it will be seen that great care and watchfulness are required on the part of the apiarist if the best results are to be looked for, because, as careful selection is necessary on the part of the stock breeders, so care is needed in raising bees. The need for raising these young queens was pointed out in May, and now is the time to utilise the queens which are raised under the swarming impulse. These, if added at the end of July and beginning of August, will have laid a goodly number of eggs in the early autumn, and, what is of equal importance, will be completely established in the spring to commence egg-laying as soon as the weather permits, thus putting the colony in a position to gather honey early. Generally speaking, it is not wise to keep a queen beyond the second season, except in cases where the queen has all the above qualities in a very marked degree, in which case she may be retained a third year for the purpose of perpetuating a race of queens from which admirable stocks can be raised.

Introducing Queens.—It is very seldom that bees take kindly to a strange queen; for this reason it is necessary to use the utmost caution in introducing her, or she may be killed by the bees by a process termed "balling," in which the bees form round in the shape of a ball and kill her by hugging her to death. To confine the queen in a cage on the comb is safe and easy. One of the best contrivances is that known as the "Pipe-cover Cage," pressed into the comb. These are supplied cheaply by appliance makers, and may, with care, be used many times. In this case the queen is placed on a card, and the cage is carefully put over it. The card and cage are placed on the comb, and the former, with great precaution, is withdrawn, and the latter pressed into the comb with a screwing motion down to the foundation. The best comb for selection is in the centre, where there is brood and honey, and the queen is caged upon the latter, so that she may have a plentiful supply of food when she needs it. Spray the bees with very thin syrup, or dust them over with flour from a dredger, and feed the colony with syrup. Next evening, about 24 hours after caging the queen, she may be liberated, and carefully observed to see whether the bees attack her by pulling her legs or wings; if so, she must be caught and caged again, and the process repeated in 24 hours, and continued until she is received quietly. Remove the old queen before attempting to introduce another, and any queen cells that may be in the hive must be carefully searched for and removed.

Wax Moth.—When taking honey keep a sharp look out for the larvae of the wax moth in the split top frames and on the under sides of the quilts.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, AUGUST 8—
Stirling Hort. Assoc. outing to Callander Park.

TUESDAY, AUGUST 11—
Roy. Hort. Soc. Coms. meet and Nat. Gladiolus Soc. combined show.

THURSDAY, AUGUST 13—
Taunton Deane Hort. Soc. Sh

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 62.4.

Actual Temperatures :—

London, *Wednesday*, August 5: Max. 68°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, August 6 (10 a.m.); Bar. 29.67; Temp. 65°. Weather—Dull.

Provinces, *Wednesday*, August 5: Max., 72°, Southend; Min., 59°, Orkney Islands.

The Care of Food Supplies.

Faced with a situation of gravity, it behoves all those who have charge of the cultivation of the land to do with despatch and discretion all that may be done to supplement the food supplies of the nation. The season is too far advanced to allow of the cultivation of Corn of any kind, and, except in favourable positions and circumstances, it is too late to plant Potatos—though where frames are available and "seed" of early varieties is obtainable, the planting of Potatos may be done with prospect of success.

Though these main crops are out of the question, it is not too late for the planting of other food-yielding crops. For example, Turnips, Swede Turnips, Carrots, and Onions may be sown with good hope of a crop. The varieties to be sown should be selected with care, and if advice is required that of the seedsman should be sought. In seeking that advice it should be in the mind of the purchaser whether he wishes the crop, *e.g.*, of Turnips, etc., to keep, or whether he intends to use it for immediate purposes.

Furthermore, there are in many gardens still in the seed beds surplus stocks of Cabbage Savoys and Cabbages. These should be transplanted in vacant ground, and those left over should be given to cottagers and others to put to like purpose. No one who realises the large area of land lying vacant will deny that these emergency precautions, if adopted universally, will prove of real and important service to the community.

At the same time, it is necessary for us all to be economical with the use of seed, for next year's harvest has to be thought of, and it is possible that supplies of seed may be short.

Farmers, as well as those who own gardens and allotments, should adopt the advice we urgently tender. The present is no time for elaborate disquisitions. Let the ground be sown at once. Practise economy in the use of garden produce, preserving as much as possible of the surplus of the fruit and vegetable crops for use or distribution later on. Save what seed is available for eking out next year's supplies. These are the first duties of those who cultivate the land.

The Botanic Gardens, Cambridge.

The Report of the Curator, Mr. J. Lynch, is, as usual, of great interest, and shows the varied activities of this well-managed garden.

The Report contains a long list of choice additions to the garden, and enumerates the plants of special interest which have flowered during the year.

Of the former, among trees and shrubs are Pinus Lambertiana, the Sugar Pine of western North America; Podocarpus alpina, a native of Tasmania and hardy in this country; Jasminum Beesianum, a new Chinese species with reddish flowers; and Rhododendron lutescens and R. oxyphyllum, new hardy Chinese species.

Among stove and greenhouse plants are Senecio auriculatissimus of Nyassaland and the Shiré Highlands, a climbing auriculated-leaved Groundsel, which by crossing has given yellow colour to the garden Cineraria; and Leptospermum scoparium var. Nichollii, with bright-red flowers, introduced by Captain A. A. Dorrien-Smith from New Zealand.

Indoor succulent plants include Aloë minima, a new species likely to be worth trying out-of-doors in a warm corner.

In the long list of herbaceous and Alpines are Ranunculus asiaticus libanoticus, a splendid single form of the florist's Ranunculus; Iris Sisyrinchium from the hills above Genoa, large and hardy of cultivation; and the new Irises, I. Forrestii and I. Bulleyana; Primula Juliae, resembling the common Primrose in habit, but with charming rose-coloured flowers—a native of Transcaucasia; the rare Caucasian Campanula Steveni, one of the hardiest of the genus; Aconitum Bulleyanum and Delphinium Bulleyanum, both new species; Globularia incanescens, "perhaps the most beautiful Alpine introduced in the last few years"; the best Omphalodes—viz., O. cappodocica, etc.

Among plants of special interest which flowered at Cambridge during the year are Puya chilensis (see *Gardeners' Chronicle*, July 5, 1913, p. 2, fig. 1); Gladiolus Masoniorum, a new species introduced by Miss Mason; and G. flabellifer Lansch, a white perianthed form, also introduced from South Africa by Miss Mason, and Helichrysum bellidioides, a pretty New Zealand rock plant. The scope of the work carried on at Cambridge may be gauged by the facts that no fewer than 92,552 botanical specimens were distributed by the Gardens, and that large quantities of plants were reared in connection with work in plant breeding carried on by various Cambridge investigators.

Royal Horticultural Society.—The next meeting of the committee will take place on the 11th inst., in the Vincent Square Hall, Westminster. At the 3 o'clock meeting in the lecture-room Mr. H. G. Mount will deliver an address on "Early Roses in Pots."

Glasgow as a Centre for the Overseas Fruit Trade.—Glasgow receives large shipments of fruit from Canada and the United States, and the consignments are distributed throughout Scotland, the North of Ireland and the North of England. According to the *Canadian Horticulturist* the yearly importation is about 500,000 barrels. Certain of the fruit is packed in boxes which contain about 40 lb., being for the most part from Oregon, Washington and California. It is expected that a further increase in business will result from the opening of the Panama Canal, as there will be an economy in freight charges.

Fruit and Vegetable Crops in Holland.—The Board of Agriculture and Fisheries is informed by His Majesty's Consul-General at Rotterdam that, according to a report of the Dutch Department of Agriculture of July 15, the yield of Apples and Pears in Holland does not promise to be very abundant. Continued drought has caused the fruit to be small and much has fallen. On the whole, Pears promise better than Apples, Plums are average to good, and Raspberries are good to very good almost everywhere. Grapes under glass are good in all districts. A similar report relating to conditions on July 11 states that eating Potatos are, on the whole, very good, and that a heavy crop of factory potatos may be expected. Prospects for Beans and Peas are good, and for Onions fairly good. The areas under the above crops are given as follows (in acres and 1913 figures in parentheses): — Eating Potatos, 338,175 (341,258); factory Potatos, 77,736 (78,642); Beans, 39,913 (41,842); Peas, 65,166 (68,187); and Onions, 6,825 (6,526).

Black Rot of Tomatos.—An investigation by Miss I. Massee, published in the *Kew Bulletin* (No. 4, 1914), demonstrates that the mycelium of the fungus (Macrosporium solani) responsible for Black Rot of Tomatos may be present in the seeds of plants affected with this disease. Diseased seed may often be recognised by black spots on the surface. In such seeds the mycelium may be found not only in the seed coat but actually in the embryo, infection of the latter taking place by way of the micropyle. Miss Massee states that diseased seed if it germinates at all gives rise to plants which exhibit "stripe" disease. It follows from these observations that no seed should be gathered from plants affected with Black Rot.

A French Fruit Syndicate.—The Agricultural Syndicate of Gaillon (Eure, France) consists of 428 members. It has proved a success, though founded only three years ago. The

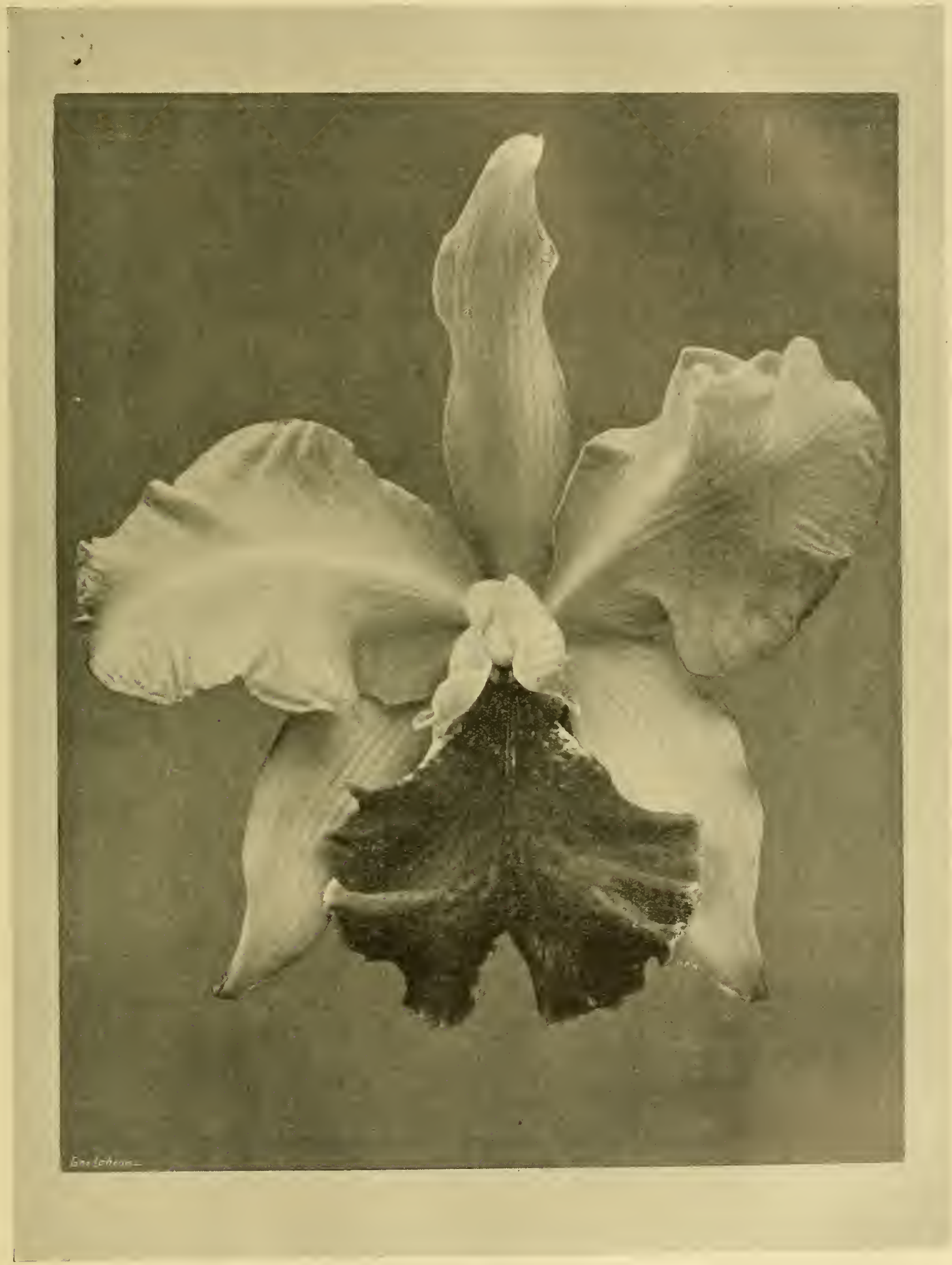


FIG. 49.—LAELIO-CATTLEYA MISS LOUISA FOWLER (L.-C. CALLISTOGLOSSA × C. GRANULOSA).
SEPALS AND PETALS LILAC-PINK; FRONT LOBE OF LIP PURPLE, WITH YELLOW MARKINGS AT THE BASE.
(R.H.S. Award of Merit, July 28, 1914—see p. 99).

syndicate purchases for the members the materials necessary to the pursuit of their calling, and undertakes the sale of their produce, which consists chiefly of various kinds of fruit and Potatos, Cherries, Plums, Gooseberries and Nuts sold in France and exported to England. Dessert Apples and Pears are sent to England, to all parts of France, to Russia, and even so far as Australia. Practically all the very choice fruits are disposed of in France and Russia, and the prices are extremely good. The syndicate (which consists of a secretary and two paid employees, with occasional extra honorary assistance) provides packing material, and in the case of choice fruits undertakes the packing. The rest of the fruits is packed by the producers, but under the supervision of the syndicate. The brand of the syndicate (S.A.G.) is a strong recommendation in the London market, for importers are aware that the syndicate does not hesitate to refuse a badly-packed or defective case. Besides the services already mentioned, the syndicate provides the usual facilities in the way of manures and seeds.

"Botanical Magazine."—The following plants are described and illustrated in the issue for July :—

Gongora grossa, tab. 8,562.—This Orchid was first described by the late Professor Reichenbach in *Gardeners' Chronicle*, June 23, 1877, page 781, from specimens that flowered in the collection of the late Sir Charles Strickland at Hildenley. The plant appears to have been lost to cultivation until 1913, when a specimen flowered at Kew Gardens. The Kew plant was presented by Mr. Walter Fox, who found it growing on a Cocoanut tree at Tenqual in Ecuador.

Kolkwitzia amabalis, tab. 8,563.—This species was described by Dr. Botting Hemsley in *Gardeners' Chronicle*, February 7, 1903, page 81, from specimens collected in China by Mr. E. H. Wilson. The plant is allied to Abelia, from which it differs in having paired and usually united flowers. Wilson mistook it for a Honeysuckle, but the plants he observed were not in flower. The inflorescence is a corymbiform thyrse of rose-pink flowers, and, as the species is quite hardy, it should prove a valuable addition to flowering shrubs in gardens.

Primula vinciflora.—This uncommon species was first described by Franchet in *Gardeners' Chronicle*, April 30, 1887, page 574, accompanied by a sketch of a plant in bloom. It was subsequently figured with two other Chinese species of Primula in *Gardeners' Chronicle*, November 20, 1909, as a supplementary illustration. It is doubtful whether the plant is hardy in this country, but it will survive the winter in a cool frame; Professor Balfour finds that it thrives best in Edinburgh Botanic Gardens when kept well flooded with water in soil that is amply drained. It is interesting that in a wild state the flowers precede the leaves, whereas in cultivation both appear almost at the same time. The corolla is violet, and the flower bears some resemblance to the greater Periwinkle, Vinca major, hence the specific name.

Trollius chinensis, tab. 8,564.—This species, like the common Globe flowers, is a good plant for the bog or water garden. The colour, as seen in the *Botanical Magazine* plate, is pale orange with an inner zone of deeper-coloured, very narrow petals. The foliage is glaucous, and has a handsome outline.

Rosa corymbulosa, tab. 8,566.—This distinct species of Rosa is most closely related to R. macrophylla; the difference, one that will appeal to many, is that it is almost spineless when mature. This plant also is a native of China. Seeds were collected by Mr. Wilson in 1907, some of which were sent by Professor Sargent, of the Arnold Arboretum, to Kew Gardens, where specimens flowered for the first time in July, 1913. The Kew plant is a bush about 6 feet high; it thrives well in heavy ground suited to other Roses, and bears small pink flowers in clusters at the ends of the branches and in the leaf axils.

Essex Farmers and Wheat-Growing.—It is stated that farmers in Essex have begun to plough up inferior pasture with the intention of sowing Wheat. They anticipate that an advance in the price of corn is likely to occur and that it may persist for some time. In stating this, however, we hope that no one will assist in bringing about this enhancement of price by buying flour beyond his normal requirements. That is literally to take bread out of other people's mouths, and in these times it must be the desire of all to share and share alike.

AUSTRALIA.

LILIUM NEPALENSE.

The weather experienced here in 1913-14 was evidently suited to the requirements of this showy Burmese Lily; after a very mild winter, during which the grass thermometer did not fall below 5° of frost, we had in November 916 points of rain followed by five months of warmth, the shade thermometer registering an average of about 70°, rising above 90° on four occasions only, with 96° as the maximum. The summer was the driest on record for our district.

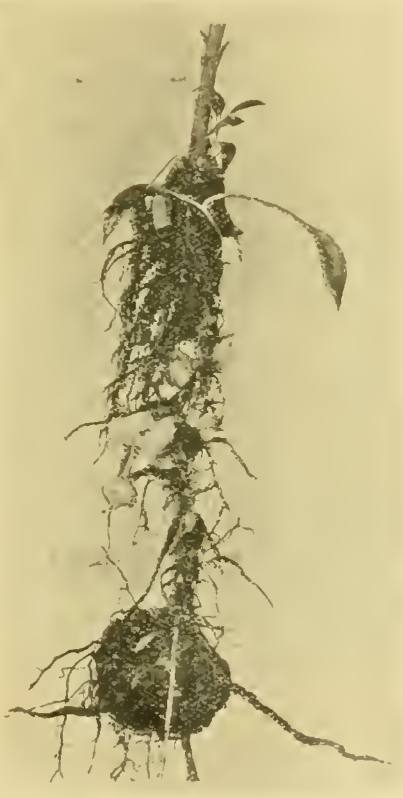


Fig. 50.—Lilium nepalense, showing the new bulbs and depth of planting.

My bulbs of L. nepalense (see fig. 50) were planted in full sun, on land sloping 1 in 4, and facing south-east. The soil was of light red granitic formation, which had been subsoiled 20 inches deep, the bulbs being planted roots upward, 10 inches deep, and covered right to the surface with weeds and soil; no shade, cultivation or water, other than rain, was received by the bed during the season.

About Christmas the black stems, almost bare of foliage, looked as though the least breeze would break them, but although planted in an exposed position where severe winds were fairly frequent, not a stem was injured. The blooms, the largest measuring 7 inches across, were freely produced from the latter end of January to the early days of April, and the pendant flowers attracted much attention by reason of their unusual colouring; the colouring and size varies in the flowers produced by different bulbs. Some are pure sulphur yellow with very dark maroon centre; this form, I think, is the most beautiful. Others are yellow, suffused with green which is separated from the white centre by a band of light chocolate; another flower was maroon throughout. No difference was noticeable in the pedicels, pollen, etc., of these varying forms.

At the date of writing, June 23, the foliage of L. nepalense is as green as it was in January, although all other Lilies have been at rest for some time, L. Henryi being usually the last to drop its leaves in May. *Gilbert Errey, Errey R.O., Victoria, Australia.*

VEGETABLES.

SPINACH AND ITS SUBSTITUTES.

Spinach, when it is a daily requirement throughout the year, may become a source of worry. It is difficult to induce the crop to grow in summer, and one has to study the climate and soil very closely to get it to succeed in winter, and especially in spring. The old varieties, "summer" and "winter," have long ago been superseded by others superior in the size and succulence of the leaf and in long-standing qualities. When just to sow the crop for winter use is a question that has to be decided by observation. Some say in July, others so late as September. Here I find the date that gives the best results is on or about August 7. In a cold season when growth is slow, there is yet ample time for the plants to become large enough to withstand the weakening influences of continual picking in winter, and if the season advances the growth more than one would wish, it is possible by careful reduction of the leaves to restore the balance. I sow also early in September, but this crop cannot be depended on to afford gatherings till growth re-commences in spring, and it is this crop that always shows the greatest percentage of loss from the root maggot. As a crop it does not pay, because by sowing on a warm border in January, leaves are produced fit to use just about as soon as they can be had from the September sowing. At the same time winter Spinach is to so large an extent a catch crop that one does not, when this late sowing fails, feel that the loss is worth speaking about. My experience then is to sow early, but not too early.

It would be useless to recommend a special soil, for each has to make the best of the soil of his particular garden. At the same time, all the plants to which the Spinach is allied botanically plainly show their liking for one of an open texture, and this so far as is possible should be sought for the winter crop especially. As a rule Spinach follows Potatos here, and sometimes Peas, but the main thing is that the ground should have been recently trenched, and also manured. The preparation previous to sowing will therefore resolve itself into a thorough pulverisation of the upper 9 inches or so, and, if there has been no rain for a time, the soil should be broken up as far as possible without bringing the moist under material to the surface. When dry it is essential to moisten the furrows before sowing the seeds, and in very dry weather the whole ground may be irrigated, and then covered with mats to conserve the moisture till germination takes place. The cooler nights succeeding, with showers, will be sufficient to carry on the plants subsequently. Then comes the apportionment of due space to the seedlings. Theoretically, each plant will easily fill a space of 1 foot, but few will be so lavish of space as that, and once gathering commences the space soon becomes wider and wider. Hoeing occasionally is a valuable aid to a healthy growth, and, above all, a very large breadth of ground should be taken in, else under the most favourable conditions the plants will fail to yield sufficient leaves to meet daily wants. There are not a few substitutes for Spinach. I noted earlier in the year Patience as a very old substitute. The common Nettle is still eaten in spring, the young growing points being the parts preferred, and these are said to be nicer than Spinach as a vegetable, and for their physiological properties, more to be desired. The variety that was selected by a former generation of nettle-eaters was that with dull red stems and dark leaves. Chenopodium Bonus Henricus is still extensively cultivated in Eastern England as a substitute for Spinach, and I recently saw C. album in a market garden, where it was called wild Spinach, though I think it was there rather as a weed than a vegetable. Beta martima, where it is found wild, is also cooked, and the nearly allied Atriplex hortensis, under the name of Arage Orach and Orage, is a very old, and now very neglected, vegetable, cooked and eaten in the same way as Spinach. It appears in the early years of the eighteenth century as "Bonny Dame" or "Good Lady," a translation of the French Bonne Dame, just as Orage was long previously derived from the French Arroche. It is now almost solely a flower of the garden, various coloured forms from apricot-yellow to crimson being in existence, the seed vessels being similarly coloured and useful for winter decorating. Polygonum Bistorta is also worth attention as a summer substitute, and I find Rumex sanguineus or Bloodwort also among the older plants, which possessed qualities similar to those of Spinach. A good strain of Scotch Kale is not to be despised in spring, if and when Spinach itself is not to be had, and Corn Salad is another common and easily-produced crop, which will often be found useful. *R. P. Brotherston, Tyninghame Gardens, East Lothian.*

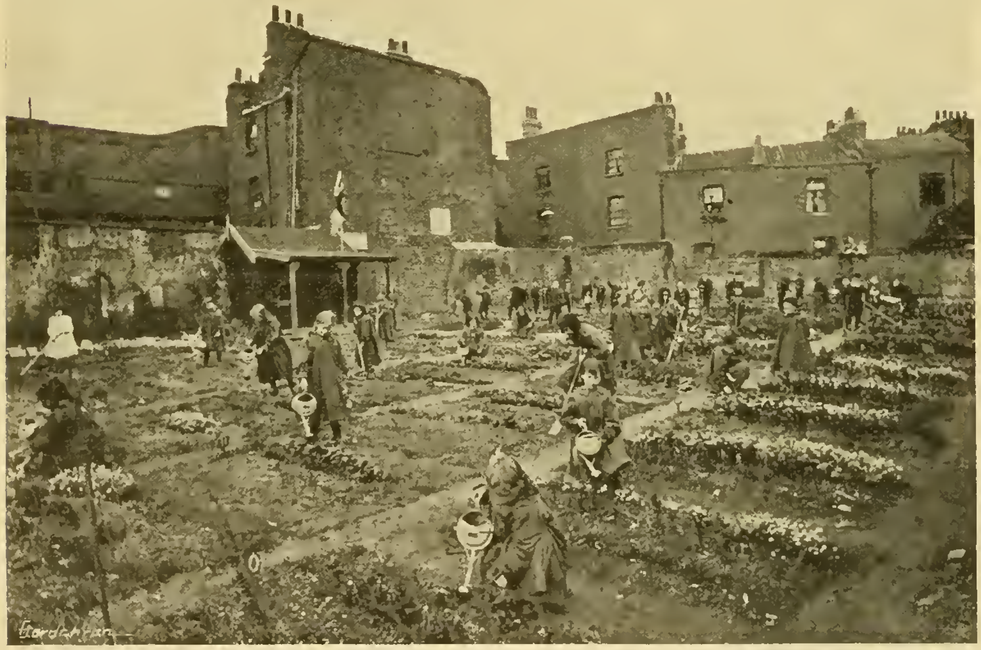


Fig. 51.—garden cultivated by children at stepney.

HOME CORRESPONDENCE.

Gardens for the Children of London.—If all the world could know of the Society that makes gardens for the children of London there would soon be a garden for every child, because no one could fail to recognise the steady improvement effected not only in health, but in mind, by raising the moral standard of the children, by giving them new and refining interests, finding amusing work for little restless hands and filling little restless minds with useful and attractive knowledge. There are now eight of these gardens in the poorest and most thickly populated parts of London (see fig. 51), and there ought to be a hundred! They are so keenly appreciated that in the roughest and least civilised parishes the children of the Council Schools ballot with intense excitement for a garden. The boys who get too big (they are not admitted after fourteen) give up their gardens with the deepest regret. In the spring and summer, for two hours every evening, after school is over, these gardens are open. Each one is superintended by a lady, who has had some training and experience as a gardener, and by a man, who helps to maintain discipline among the boys, and is also caretaker of the ground. Each child has a little numbered plot of his or her own, tools, and a watering can. Even so small a possession is something thrilling for the children, and when they cut their own Lettuces, or Radishes, or Mustard and Cress to take home the excitement increases. They also sow seeds of simple flowers, such as Sweet Peas or Nasturtiums, or Cornflowers, and sometimes there is a little bunch of these flowers to brighten a home where anything bright is seldom seen. The rules for the children are simple. To be obedient, to be fair to each other, and to be quiet. The fear of losing a garden which so many others want is generally enough to maintain order, but of course much depends on the personal influence of the lady superintendent. One of the greatest needs of these gardens is to find men and women, lovers of flowers and children, who will make a pilgrimage, perhaps once a week, to give a helping hand to the teacher, and encourage the efforts of the children. It is personal interest and sympathy that are needed. Everyone who has a garden knows how keen is the pleasure of showing it and talking about it. It will easily be understood how all this helps to mould and influence the character of children, for whom, out of school, there is so little to bend the twig in the right way. In some places it has even been said that they learn their first lesson of practical honesty when they are made to understand that they must respect each other's tools, and that Bill may dig to his heart's content in his own garden, but he must leave Bert's garden alone. It is not very useful to turn a number of children into a bare space and tell them to play; they will only play in the fashion of the streets, or of the gaunt playgrounds of their schools. No new or refining influence is at work to teach, in the shape of a new and very popular game, some of the great lessons of Nature. No one who has seen those gardens, those tiny bits of ground snatched from bricks and mortar and pavements, to be made pleasant and green and fruitful by the children themselves, can doubt for a moment the really magnificent effect that the work has on the little gardeners. Few interests can last all their lives in the same way. If a boy is taught to carve he may possibly enter some trade or craft which will roughen his hands and make it impossible, or keep him sitting still all day and make it undesirable. But there are few in whom the love of Nature and the passion for growing things has once been quickened who will not find time and space for something in the shape of a garden, if it be only a window box. It may be mentioned here that in conjunction with the Boys' Country Employment Society it is hoped that suitable work in the country may sometimes be found for the most promising boys. If it gives them only an idea of pleasure apart from cigarette smoking and gambling is it not something gained? The taste for gardening lasts and develops in strange places. Dean Hole's stories of the Black Country will be remembered, especially that of the miner who sacrificed the blanket from his own bed to save his Roses from freezing! Funds are badly needed to keep up the gardens; there are three new ones this year, and it is expensive to start them, because the ground, generally a vacant building plot, has actually to be rescued from brickbats and remade for the purposes of a garden. Plants, simple border perennials suitable for London, are also keenly welcomed; just the sort of thing that a gardener often throws away in the spring and autumn. Further details of the scheme and a list of suitable plants will be furnished gladly to anyone who will write to the hon. secretary of the Children's Gardens, Mrs. Lyons, 5. Heathview Gardens, Roehampton, S.W. *Edith M. Keate.*

Club Root of Brassicas.—There is a belief prevalent locally that coating the seed of brassicas with red lead is a preventive of club root (Plasmodiophora brassicae). I do not remember seeing it recommended in any literature dealing with the disease, but if it is a fact it should be more generally known. Evidence at my disposal points strongly to the efficacy of the dressing, which was primarily intended as a deterrent to seed-eating birds. In this respect it is an unqualified success. The method adopted is first slightly to moisten the seed with water, and then to add the red lead and stir up so as to ensure a thorough coating on all the seeds. Care must be taken not to add more water than is just sufficient to damp the seeds, or difficulty will be experienced in sowing. *J. C. Grimwood, Alresford, near Colchester.*

[It is by no means unlikely that this simple expedient may be a good means of prevention of club root, for, as is well known, the parasite enters the root leaves of the seedling plant, and it is quite possible that the lead oxide may be poisonous to the parasite. The value of the "remedy" is well worth careful investigation. —Eds.]

Pests of the Strawberry.—The abnormal heat and the dry season we have just passed through have provided many illustrations of the ways in which the habits of wild creatures may be influenced by a deficient rainfall. In the great Strawberry-growing district of Aberdeenshire—Deeside—growers have experienced much difficulty this season in safeguarding their crops from the depredations of winged creatures and squirrels. One of the worst offenders was the starling, which is generally described as the friend of the husbandman and a great enemy to insect pests. The dry weather, however, had so hardened the land that an easier mode of obtaining food than digging in the soil was not to be overlooked, and so the birds descended in flocks upon the Strawberry beds. Wood pigeons, too, followed in the same destructive courses, an action which need not surprise one when one remembers their decided taste for bilberries in season. But the most remarkable phenomenon of all was the behaviour of squirrels from the neighbouring woods, for not only did the animals eat all the Strawberries they could at one time, but, with that half-forgotten instinct which impels our native wood pests to store up nuts and other food in a desultory manner, they collected little heaps of berries in the hollows here and there in the fields, apparently in the hope that they might be able to utilise them when days of plenty were succeeded by days of famine. *W. K., Aberdeen.*

Restio subverticillatus.—In Mr. Fitzherbert's article on "Abbotsbury in Early June" (p. 68) he mentions a plant of Restio subverticillatus. I may say that I have grown this plant for a number of years in a garden hundreds of miles north of Abbotsbury. It is an interesting plant from a morphological point of view, but I discontinued growing it on account of its slight decorative value. In a light, sandy soil in a sheltered situation it forms a mass of culms from 4 to 6 feet high, almost leafless. What foliage there is takes the form of sedge-like sheaths. In your obituary notice of the late Lord Annesley (Dec. 19, 1908, p. 440) I notice you mention that his last note to the *Gardeners' Chronicle* (unpublished) was on this subject, the plant having been included in his select collection in the Mourne Mountains. *F. W. Jeffery, Abbeyhill, Argyll.*

Roses at the Wolverhampton Show.—Referring to your report of the Wolverhampton floral fête, and particularly to exhibits of Roses and Sweet Peas (p. 40), regret is expressed that our local show clashed with the National Rose Society's exhibition, and in consequence was below its usual high standard. This report correctly puts the case, which precluded many of our professional Rose growers from doing justice at both shows. The Wolverhampton show has in the past ranked as one of the finest exhibitions in the kingdom, and if this high reputation is to be maintained it behoves our local executive to see that the date does not again clash with that of the National Show. *William Moseley, Merridale Street, Wolverhampton.*

The Weather in Scotland.—Many gardens in Scotland have suffered severely from a prolonged drought accompanied by brilliant sunshine. Fortunately, in a number of districts local showers and rains ameliorated the conditions, and in these little difficulty was experienced. In some parts, however, the fruit crops were materially injured, Strawberries, Raspberries, and other small fruits being adversely affected. Rains in the second week in July were of great benefit in late districts where Raspberries are largely cultivated, and there the returns are expected to be satisfactory. In other parts, however, both Strawberries and Raspberries were deficient. The cultivation of early Potatos is an important industry in South Ayrshire, especially near the coast, and this season satisfactory prices were realised for growing crops sold by auction. The prolonged drought which occurred soon after the sales has greatly reduced the crop, and the transactions cannot be remunerative to the dealers who bought growing crops at that time. The yield is generally much smaller than usual, though prices have not risen in proportion.—*A.*

Cedrus Deodara.—I notice that mention is made of a tree of Cedrus Deodara bearing cones at Kew. One of my trees, about seventy years old, is coning pretty freely. It has coned on a previous occasion. *Archibald Buchan-Hepburn, East Lothian.*

Broccoli, Old and New.—Whilst looking through a seed catalogue early in the year, with a view of making a selection of Broccoli for an amateur friend, I came across, amongst others, such sorts as Michaelmas White, Winter Mammoth, Christmas White, and Eastertide, but not such well-known sorts as Snow's Winter White, Wilcock's Bride, Adam's Early, Cattell's Eclipse, Backhouse's Winter White, Champion Late White, and Ledsham's Latest of All. Have the four named above been in the Wisley trials, or are they new varieties recently certificated, or some of the old sorts under a new name and double their price? *W. P. R.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

July 28, 1914.—*Present*: Mr. E. A. Bowles, M.A., F.L.S. (in the chair); Dr. F. Keeble, Messrs. J. T. Bennett-Poë, W. Hales, E. M. Holmes, W. Fawcett, F. J. Chittenden (hon. sec.), and E. A. Bunyard (visitor).

The late Mr. G. Gordon.—The chairman read a letter from Mrs. Gordon, thanking the committeee for their vote of condolence.

Diseased Narcissus Bulbs.—Mr. Chittenden reported that he had examined the Narcissus bulbs sent by Mr. Bliss to the last meeting, and had found in every one of them bulb mites feeding in considerable numbers, and in the case of one bulb only slightly diseased in one scale, the mites were feeding on the limit of the decay. Larvae of Eumerus strigatus were found in some only of the bulbs, and in some, but not all, fungi were growing. There were no chlamydospores of Fusarium present, nor was any fungus fruiting, except Penicillium. An effort was made to get fruit of the fungi present, but Fusarium was not developed. No eelworm was found in these examples. Mr. Chittenden said he had also examined some bulbs sent by Mr. Jacob, which were infested by eelworm, Tylenchus devastatrix, just as were those shown last year.

Grubs Feeding on Rose Buds.—Mr. Chittenden also reported that Dr. Lefroy had identified the small insects feeding on the Rose buds recently inserted as Parrisia rosaria. Little is known concerning the small two-winged fly, but Messrs. Merrick, the senders, attribute a considerable amount of damage to its attacks.

Parasite on Magpie Moth.—Mr. E. M. Holmes showed an ichneumon fly bred out from the chrysalides of Abraxas grossulariata, the magpie moth, at Sevenoaks. It had been identified at the British Museum as Stenichneumon scutellata, a very uncommon species. Mr. Holmes also showed some scale insects on Bay, which await identification.

Geum "Mrs. Bradshaw."—Mrs. Welsh, of Reigate, Surrey, sent a curious form of Geum with the perianth pieces green-tipped with red, about twenty in number, and separated by a considerable distance from the carpels. The flower was attacked by aphides, but whether their presence was the cause of the anomaly, or only a coincidence, cannot be stated. Mrs. Welch said "the plant flowered beautifully and true last year; this year, only blooms like the enclosed have been produced. The plant has not been moved, and appears to be perfectly healthy."

Nettle Leaf or "Reversion" in Black Currants.—Affected specimens were shown by Mr. Edward A. Bunyard. He suggested that the so-called reversion is caused by the production of lateral branches, owing to some injury to the terminal bud, the Black Currant mite being probably the principal cause. A series of shoots were shown, which had been cut while in growth at different heights. Those which had been stopped at 2 inches from the base of the shoot showed laterals with the leaf reduced in size; those, however, which were stopped at some 14 inches showed the numerous lateral shoots and much-cut leaves associated with this deformity. It was pointed out that the normal method of cultivation of the Black Currant consists in the production of shoots from the base, which are frequently replaced, and by this means only can large fruit be produced. If the spur system of growth is tried, the fruit in a few years will become small and worthless. Any injury which promotes the formation of these spurs will therefore result in fruit of reduced size. It was suggested by the chairman that cuttings from the side shoots showing the deformed leaves should be taken, and if under good culture they produced normal leaves, it would confirm this view.

LEAMINGTON AND COUNTY.

(*Concluded from p.* 104).

Plants.

The most artistically arranged group of plants on a space of 13 feet by 10 feet, open only to amateurs and gentlemen's gardeners, was exhibited by the Misses Robinson, The Newlands, Leamington (gr. Mr. A. J. Friend), who were successful in this class in 1911-12-13. The arrangements of the fine-foliaged and choice flowering plants were on very similar lines to those of previous years.

Fruit (Open).

Fruit generally was well shown. In the principal class 8 dishes of distinct kinds of fruit were required (Pine Apple excluded). The same exhibitors, viz., the Earl of Craven, Coombe Abbey (gr. Mr. H. Chandler), and Hugh Andrews, Esq., Toddington Manor, Winchcombe (gr. Mr. J. R. Tooley), who won 1st and 2nd prizes respectively last year, met again, and the order of merit was repeated. The Earl of Craven's collection included admirable Negro Largo Figs, large, well-coloured Royal George Peaches, splendid Lord Napier Nectarines, James Grieve Apples, Bigarreau Napolean Cherries, and an unusually large, rich yellow Melon. The Grapes left something to be desired.

In the 2nd prize group Grapes were excellent, so also were Figs, Peaches, and Nectarines. Prizes were offered for decorations in this class, and the awards were: 1st, Hugh Andrews, Esq.; 2nd, the Earl of Craven.

The last-named exhibitor won—as he did a year ago—the challenge cup and £2 offered as first prize in the amateur and gentlemen gardeners' class, for 4 dishes of fruit, distinct kinds. He showed Lord Napier Nectarines, Royal George Peaches, a large yellow seedling Melon, and Muscat of Alexandria Grapes; 2nd, Mrs. W. E. Everett, Leamington (gr. Mr. E. Allaway).

Sir H. Leon, Bart., Bletchley Park, Buckinghamshire (gr. Mr. G. Cooper), won 1st prizes in classes for (1) four dishes of fruit, distinct kinds, with Peaches, Nectarines, one Melon, and shapely, well-finished Madresfield Court Grapes; (2) two bunches of black Grapes, also with Madresfield Court; (3) 1 dish of Peaches, with unusually large, well-coloured fruits of the variety Dymond; and (4) a dish of Nectarines.

Hugh Andrews, Esq. (gr. Mr. J. R. Tooley), showed the best two bunches of white Grapes. The Earl of Craven was placed 1st in classes for single dishes of (1) dessert Apples, (2) kitchen Apples, (3) red Currants, and (4) black Currants. The Manor Fruit Farm, Knowle, showed the best 3 dishes of dessert Apples, and the executors of Mr. T. Marsh won 1st prize for a similar number of dishes of kitchen Apples. H. E. Wise, Esq., Shrubland Park, Leamington (gr. Mr. H. Casley) had large, richly-coloured Apricots, for which he was awarded 1st prize. Mrs. G. A. Fenwick, The Croft, Hillmorton, Rugby (gr. Mr. E. Burbidge), had the best-flowered Melon in his fruit of the variety Emerald Gem, as well as the 1st prize dish of Cherries. The Revd. J. J. Agar Ellis (gr. Mr. E. Dolphin) had the best of 10 exhibits in the class for Gooseberries.

Vegetables.

Prizes were offered for 10 distinct kinds of vegetables. 1st, Lord North, Wroxton Abbey, Banbury (gr. Mr. E. R. Janes), for good Ailsa Craig Onions, Perfection Tomato, White Queen Cauliflower, new red Intermediate Carrot, and Sutton's Block Beet; 2nd, Hugh Andrews, Esq., Toddington Manor, Winchcombe (gr. Mr. J. R. Tooley); 3rd, Miss Hamilton, Studley College, Warwickshire.

In Messrs. Sutton's class for 6 distinct kinds of vegetables the best of 4 exhibits was also shown by Lord North (gr. Mr. E. R. Janes) with splendid examples of White Queen Cauliflower, White Leviathan Onion, and Magnum Bonum Dwarf French Beans; 2nd, Hugh Andrews, Esq. (gr. Mr. J. R. Tooley).

Messrs. Webb and Son offered prizes for 6 distinct kinds. 1st, Hugh Andrews, Esq. (gr. J. R. Tooley), with good Aldenham Prize Pink Celery, Exhibition Potato, and monster white Tripoli Onion; 2nd, F. E. Muntz, Esq., Umberslade Hall, Hockley Heath (gr. Mr. H. S. Foster). The last-named exhibitor also won 1st prize in Messrs. Dickson and Robinson's class for 6 kinds. He showed good Premier Onion and Scarlet Model Carrots.

Non-Competitive Exhibits.

The Challenge Cup offered by Mr. Alfred Holt for the best non-competitive exhibit was awarded to Messrs. Wallace and Co., Colchester., for a water-garden

Gold Medals were awarded to Mr. Frank Dennison, Leamington, for Roses; Mr. R. G. Rudd, King's Heath, for Carnations; Mr. P. J. Perry, Banbury, for floral designs and Roses; Mr. Douglas Leigh, Hampton-in-Arden, for Roses; Messrs. Dobbie and Co., Edinburgh, for Sweet Peas; the Lapworth Nurseries, for a bog and water-garden; Messrs. John Waterer, Sons, and Crisp, Ltd., for hardy shrubs; Messrs. Hewitt and Co., Solihull, for hardy flowers and Roses; Messrs. W. H. Simpson and Sons, Birmingham, for Sweet Peas and Antirrhinums; and the Horticultural College, Studley, for vegetables.

Silver-gilt Medals were awarded to Mr. H. N. Ellison, West Bromwich, for Ferns and Cacti; the Clury Nurseries, Langley, for Carnations; Messrs. Hinton Brothers, Warwick, for a rock garden; Messrs. Pipers, Bayswater, for hardy flowers; Mr. H. J. White, Worcester, for hardy flowers; and Mr. G. W. Miller, Wisbech, for hardy flowers.

Silver Medals were awarded to Messrs. Robert Sydenham, Ltd., Birmingham, for Sweet Peas; Messrs. Reamsbotom and Co., Geashill, King's County, for Anemones; Messrs. B. Hurst and Son, Burbage, for Roses; and Messrs. John Waterer, Sons, and Crisp, Bagshot, for hardy flowers.

FORESTRY CONFERENCE AT THE ANGLO-AMERICAN EXPOSITION.

The subject of the first paper read by Sir William Schlich before the above conference on July 16 was entitled "A General View of the Condition of Forestry in the British Empire." The author, after a brief reference to the position of forestry in the British Isles, and the efforts which have been made within the last half-century to induce the Government to take up forestry as a national work, gave a very lucid and interesting account of forestry in India, a subject with which his long connection with India makes him a leading authority. Amongst other things the audience was informed that the Indian Forest Department controls 243,000 square miles of country, and that the revenue of the workable forests has increased in 50 years from 1,000,000 rupees to 14,000,000 rupees. In that service there are 213 English officers. These, until the last year or two, were trained at Cooper's Hill and latterly at Oxford, but several other Universities now assist in training the men. The efficiency of the Department was referred to in eulogistic terms, and the author described the Indian Forest Service as the foundation of systematic forestry throughout the British Empire. Several of the Colonies have benefited from experience gained in India, for the Forest Service of that country has assisted the Colonies by advice and the transfer of trained men for organising work. The lecturer then dealt with forestry in Ceylon, Burma, New Zealand, Australia, South Africa, Natal, British East Africa, West Africa, the Sudan, Cyprus, and Canada, giving in each case much useful information and indicating the manner in which men are trained to conduct the work in the different countries. Sympathetic reference was made to the late Cecil Rhodes, who was fully alive to the necessity of encouraging systematic forestry operations in Rhodesia and other parts of Africa. It was also stated that Rhodes scholars are now being trained at Oxford to fill as many as possible of the vacancies which occur in the South African Forest Service.

North American Trees in Britain.

Professor Henry followed with a paper on "North American Trees in Britain." He took pains to show how different climatic conditions affected the health of trees, and gave several instances of trees which botanists include as single species differing widely in their requirements according to the region they occupy. Thus Douglas Fir from the coastal region of Western North America differs very much in its behaviour from Douglas Fir from the Rocky Mountains, and it was made quite clear that whilst trees grown from seeds collected in one region might be a distinct success in a given foreign country, trees raised from seeds collected in another region might prove a complete failure. He therefore strongly emphasised the fact that strict attention should be paid to seed collection, seeds only being procured from districts where climatic conditions were likely to correspond with those where the trees were to be grown. Considerable attention was paid to the fact that whereas most of the trees from the western side of North America give good results in the British Isles, those from the eastern side of the same continent are in many instances total or partial failures. Except in a few cases, the lecturer considered that North American trees were not likely to be of greater value for silvicultural purposes in the British Isles than our native trees and the few exotics which have occupied positions in our woods for a long period. The exceptions were Douglas Fir, Sitka Spruce, Thuya plicata, Cupressus Lawsoniana, and perhaps Larix occidentalis. Of broad-leaved trees he most favoured the Black Walnut and Robinia Pseudacacia. This paper gave rise to the best discussion of the day.

The Board of Agriculture and Forestry.

The next paper was by Mr. R. L. Robinson, the Superintending Inspector of the Board of Agriculture and Fisheries, and the head of the forest branch of that Department and of the similar branch of the Office of Woods and Forests. The title of his paper was "The Relation between the Board of Agriculture and Forestry in England." He traced the ebb and flow of forestry over a period of several centuries, and then went on to explain the measures which were being taken by the Board of Agriculture to encourage forestry in this country. Although the Crown woods had always received attention, he pointed out that it is only within the last five years that an effort has been made to organise a proper forest system. Progress in the early stages must perforce be slow, the lecturer arguing that better progress in the end was likely to follow a slow but sure start by which the Forestry Department could be built upon a sure foundation than would be the case were a considerable amount of work put in hand which had been ill-considered. As a preliminary the forest officers were surveying all positions where trees would be likely to thrive, the most suitable positions being earmarked for the earlier operations. Crown woods and forests were receiving attention, and a School of Forestry was already established in the Forest of Dean which it was hoped would undergo considerable developments in the near future. It may here be stated that the policy as outlined by Mr. Robinson may be found in greater detail in the "First Annual Report of the Forestry Branches of the Board of Agriculture and Fisheries and Office of Woods and Forests for the year 1912-1913" (see p. 108). Discussing the paper, Mr. Leslie Wood urged that all reports dealing with timber measurements issued by the Board should be in terms which would be easily understood by landowners, agents and foresters, rather than that the calculations should be made by methods not usually recognised in this country. He also expressed his pleasure that publicity was now being given to the manner in which the Government intended to proceed with afforestation. Sir William Schlich and several others also took part in the discussion.

Forestry in Ireland.

Mr. A. C. Forbes, who is at the head of the Forestry Department in Ireland, then read a paper on "Irish Forestry." He outlined the scheme of operations in Ireland, and gave many interesting sidelights upon the difficulties which have to be faced when a proposal is made to enclose land in Ireland for planting, even though its value for agricultural purposes may be small. As in England and Scotland want of money for the purchase of land, planting, and other objects appears to be keenly felt, and progress is perforce slow. In Ireland fewer kinds of trees can be successfully grown than in England and Scotland, owing to cool summers, mild winters and frosty springs, the lecturer remarking that last spring many plantations which were in the best of health and making good progress were cut back by frost into wood which was three or four years old. He considered that Cupressus macrocarpa was one of the best exotic trees for Ireland, whilst Douglas Fir and Sitka Spruce promised well. Thuya plicata also appeared to be worth growing for poles.

Professor Sommerville had also a good word to say for Cupressus macrocarpa, when planted on thin soil overlying chalk.

Votes of thanks to the Administration of the Exposition, the lecturers, chairmen, and to Professor Sommerville, who acted as secretary of the Conference Committee, concluded the meeting. During the concluding remarks the hope was expressed that such a conference might become an annual event, and that some steps should be taken to secure the publication of the papers. With reference to the latter suggestion, Professor Sommerville promised to try to secure the publication of the four papers, and one on "Forestry in the United States," which had been promised but was not available on that date.

MIDLAND CARNATION AND PICOTEE.

July 30, 31.—The twenty-fourth annual show held at the Botanical Gardens, Edgbaston, was smaller than usual, and the attendance of visitors was below that of previous years. Competition in the open classes for dressed flowers shown in paper collars was weak, but in the smaller classes reserved for amateurs there was greater enthusiasm. All the dressed flowers were arranged along one side of the corridor, from the Palm house to the exhibition hall, and the specimens shown in vases occupied the opposite side, which made a very pretty effect. Honorary exhibits of Tree Carnations, Antirrhinums and Sweet Peas were accommodated in the large exhibition hall. Competition in the Sweet Pea classes, for which special prizes were given by Messrs. Robert Sydenham, Ltd., was very poor.

First Division (Open).

Single Blooms on Stands.

Twelve Self Carnations.—Messrs. A. R. Brown, Ltd., King's Norton, won the 1st prize with large well-formed flowers of Irma, Ann Hathaway, Mrs. G. Marshall, Titan, Farthest North, Bob Acres, Elizabeth Shiffner, Doris Taylor, Fujiyama, Daffodil, Brightness, and Prairie Belle. 2nd, Mr. R. G. Rudd, King's Heath, who had grand specimens of Titan, Daffodil, Mrs. George Marshall, Modesty, and Mrs. F. W. Flight. 3rd, Mr. F. W. Goodfellow, Walsall.

Twelve Fancy Carnations.—1st, Mr. R. G. Rudd, with handsome broad, thick-petalled flowers of the following varieties:—Forester, Alice Bryon Stewart, Lord Steyne, Donald McDonald, Hercules (Premier), Mrs. Leo Hunter, Father O'Flyn, Becky Sharp, Pasquin, Linkman, Queen Eleanor and Jupiter. 2nd, Mr. C. H. Herbert, whose flowers were smaller than those in the 1st prize stand. His best varieties were Edenside, Mrs. Leo Hunter, Togo, Linkman, Lord Steyne, A. B. Stewart, Hercules and Becky Sharp. 3rd, Messrs. A. R. Brown, Ltd.

Twelve Yellow-ground Picotees.—Mr. C. H. Herbert beat Messrs. A. R. Brown, Ltd., in this class with choice flowers of Margaret Lennox, Eclipse, John Ruskin, Togo, Lady Gascoigne, Santa Claus, Archie Brown, Corona, Gloria, Exquisite and Romance. Messrs. Brown's flowers were on the small side, and a trifle uneven, Lady Gascoigne and Princess being the weakest pair.

Twelve White-ground Picotees.—The same two exhibitors were placed as named in this class. Included in Mr. Herbert's stand were exquisite blooms of Lady Sybil, Ganymede, Fair Maiden (Premier), Amy Robsart, Mrs. G., Chaundy, Thomas William, Mrs. Gorton and Clementine.

Twelve Flake or Bizarre Carnations.—Here again Mr. Herbert excelled with well-marked and clearly-defined specimens of Peter Pan, Gordon Lewis, Master Fred, Shamrock, J. S. Hedderley, Admiral Curzon, Wm. Skirving, Meteor, Sportsman, S. S. Thompson, Robert Houlgrave, and Black Diamond. 2nd, Messrs. A. R. Brown, Ltd., who had good flowers of Robert Houlgrave, Peter Pan, Gordon Lewis, Emigrant, Torchlight, Admiral Curzon, and Flamingo.

Flowers Shown in Vases without Cards. Blooms Staged in Threes.

The schedule required six varieties in each of the following four classes. The use of wires was disallowed, except as mere supports which must come beyond the base of the calyx; no paper collars, splitting or turning back of the calyx permissible. The flowers were to be staged so that the base of the calyx stood not less than one inch above the vases. Carnation buds and foliage only allowed.

Six Varieties of Self Carnations.—1st, Messrs. A. R. Brown, Ltd., for splendid quality flowers well set up. The varieties exhibited were Mrs. Elliot Douglas, Rosy Morn, Mrs. G. Marshall, Dora Blick, Cardinal, and Prairie Belle. 2nd, Mr. R. G. Rudd, whose blooms of Mrs. G. Marshall, Solfaterra, and Rosy Morn were very attractive. 3rd, Mr. C. H. Herbert.

Six Varieties of Fancy Carnations.—The best of four exhibits came from Messrs. A. R. Brown, Ltd., who had perfect specimens of Lord Steyne, Rhea, Linkman, Mandarin, Forester, and Becky Sharp (Premier). 2nd, Mr. R. G. Rudd, who had Forester, Lord Steyne and Linkman in excellent condition. 3rd, Mr. C. H. Herbert.

Six Varieties of Yellow-ground Picotees.—Messrs. A. R. Brown, Ltd., secured 1st prize with superior flowers of Margaret Lennox, John Ruskin, Niel Kenyon, Togo, Santa Claus, and Maggie. 2nd, Mr. F. W. Goodfellow. 3rd, Mr. C. H. Herbert.

Six Varieties of White-ground Picotees.—Messrs. A. R. Brown, Ltd., were again placed 1st. With the exception of Thomas William, all the flowers were of excellent quality. 2nd, Mr. C. H. Herbert.

Second Division (Amateurs).

Five classes were reserved for flowers shown on boards with paper collars, and four classes for flowers shown in vases with Carnation buds and foliage. Mr. A. H. Birchley was the most successful exhibitor in this division.

Six Self Carnations. — The flowers which gained the 1st prize for Mr. A. H. Birchley, Selly Oak, were remarkable for their large size, smooth even petals, and freshness. The varieties were: Daffodil, Bob Acres, Wyatt, Dora Blick, Alba, and Dorothy Vernon. 2nd, Mr. F. Bayliss, Walsall, who had a stand of good quality flowers. 3rd, Mr. G. D. Ford, Acocks Green.

Six Fancy Carnations.—Mr. Birchley repeated his success by again beating eight contestants. He had superb flowers of Mrs. Leo Hunter, Hercules, John Rudd, Linkman, Forester and Bombardier. Included in Mr. G. D. Ford's 2nd prize stand were small but exquisite flowers of Alice Byron Stewart and Linkman. 3rd, Mr. F. Bayliss.

Six Yellow-ground Picotees. — There were seven good exhibits in this class. 1st, Mr. T. M. Tranter, Solihull, with refined specimens of Margaret Lennox, John Ruskin, Togo (Premier), Onward, F. W. Goodfellow and Mrs. J. J. Keen. Mr. A. H. Birchley followed closely.

Six White-ground Picotees.—The last-named exhibitor led in this class with exquisite flowers of Amy Robsart, Mrs. Sharp, Favourite, W. E. Dickson, Lavinia and Fair Maiden. 2nd, Mr. R. Bruce Waite, Harborne.

Six Flake or Bizarre Carnations.—The 1st prize was awarded to Mr. T. M. Tranter, whose flowers, except Wm. Skirving, were grandly shown. They were: Sir Kenneth (Premier), Shamrock, Arline, J. S. Hedderley and Gordon Lewis. 2nd, Mr. C. F. Budenberg, Marple.

Blooms Staged in Threes (Amateurs).

Mr. Birchley excelled in a class for three varieties of Self Carnations with Daffodil, Dorothy Vernon and alba; and in another class for three varieties of white-ground Picotees with delightfully fresh well-set-up blooms of Fair Maiden (Premier), W. E. Dickson and Mrs. Gorton. Mr. C. F. Budenberg was placed 2nd in each class.

Three Varieties of Fancy Carnations.—The best of seven exhibits came from Mr. F. Bayliss, who showed Sam Weller, Pasquin and Linkman. 2nd, Mr. T. M. Tranter.

Three Varieties of Yellow-ground Picotees.—Mr. C. F. Budenberg won the 1st prize in this class with Margaret Lennox, Exquisite and Togo. 2nd, Mr. T. M. Tranter.

Third Division.

Classes were provided for amateurs whose collection of Carnations did not exceed 300 plants, who neither employ a gardener regularly nor advertise plants for sale. Some excellent flowers were exhibited in this division.

Flowers Shown on Cards.

Six White-ground Carnations or Picotees.—Mr. F. E. Holland, Bearwood, won the 1st prize with Fair Maiden, Mrs. G. Chaundy, Lady Sybil, Lavinia, Ganymede and Mrs. Openshaw. 2nd, Mr. F. W. Woodward, Bournville.

Mr. W. H. Bailey gained 1st prizes in classes for (1) six self Carnations with grand blooms of Sappho, Mrs. George Marshall, Bookham White (Premier), Fujiyama, Mrs. Eliot Douglas and Wyatt, and in another for six fancy or yellow-ground Carnations or Picotees. He showed splendid flowers of Hercules, Edenside, Hecla, Lord Steyne, Skirmisher and Linkman.

Flowers Shown in Vases.

Mr. W. H. Bailey won 1st prizes in classes reserved for (1) six self Carnations: (2) six fancy or yellow-ground Carnations or Picotees and (3) three self Carnations, one variety. 1st prize winners in other classes were Mr. E. Kenwright, Smethwick; Mr. P. J. Brookes, Bearwood; and Mr. F. W. Woodward, Bournville.

Premier Flowers (Dressed.

Bizarre.—Sir Kenneth, shown by Mr. T. M Tranter.

Flake.—Gordon Lewis, shown by Mr. C. H Herbert.

Heavy-edged White-ground Picotee. — Mrs. Openshaw, shown by Mr. F. E. Holland.

Light or Wire-edged White-ground Picotee Fair Maiden, shown by Mr. C. H. Herbert.

Heavy-edged Yellow-ground Picotee.—Togo, shown by Mr. T. M. Tranter.

Light-edged Yellow-ground Picotee. Exquisite shown by Mr. F. W. Goodfellow.

Yellow-ground Fancy Carnation. — Hercules, shown by Mr. R. G. Rudd.

Self.—Bookham White, shown by Mr. W. H. Bailey.

Premier Flowers Shown in Vases.

Self.—Daffodil, shown by Mr. A. H. Birchley

Fancy.—Becky Sharp, shown by Messrs. A. R. Brown, Ltd.

Yellow-ground Picotee.—Onward, shown by Mr. E. Kenwright.

White-ground Picotee.—Fair Maiden, shown by Mr. A. H. Birchley.

Winners of Medals.

The Silver Medal offered to the most successful exhibitor in the first division was won by Messrs. A. R. Brown, Ltd., with 191 points Mr. C. H. Herbert was awarded the Bronze Medal with 154 points. Mr. A. H. Birchley won the Silver Medal in the second division with 126 points. Mr. T. M. Tranter secured the Bronze Medal with 86 points.

The Silver Medal offered by Mr. W. Waters Butler to the most successful exhibitor in the third division was won by Mr. W. H. Bailey with 79 points. The Bronze Medal offered by the Midland Carnation Society was won by Mr. F. E. Holland with 63 points.

The "Carnation Brown" Silver Medal offered to the most successful exhibitor in the novice class was secured by Mr. E. Rainscourt.

Honorary Exhibits.

Mr. A. F. Dutton, Iver, had an effectively arranged group of Tree Carnations on a space of 30 feet by 4 feet along one side of the exhibition hall. (Gold Medal.)

Tree Carnations were also shown by the Clur Nurseries, Langley. This exhibit, arranged in front of the orchestra, was a very attractive display. (Silver-gilt Medal.)

Messrs. W. H. Simpson and Sons, Birmingham, were represented by an unusually large, well-arranged group of new Antirrhinums and Sweet Peas on low, broad tier-staging. (Gold Medal.)

SWEET PEA SHOW AT SHREWSBURY.

July 29.—A Sweet Pea competition, arranged by Jones and Sons, Ltd., Shrewsbury, was held on Wednesday, the 29th ult. The show was open to the public at a small charge, and the gate-money was given to the Salop Infirmary and the Wellington Cottage Hospital.

There were six classes, and competition was keen. In the class for 12 bunches, distinct, Mr. L. Webb, Welshpool, was awarded the 1st prize for grand bunches, his best varieties being Barbara, Prince George, T. Stevenson, Illuminator, King Manoel, and Hercules. Dr. Loney, Wrenbury, was placed 2nd; and Mr. Duncombe, Oswestry, 3rd.

For nine bunches, distinct, Mr. L. Webb again excelled, and again Dr. Loney was 2nd with Mr. Oakley, Glansevern Cottage, 3rd. In the Cottagers' class Mr. Watson was placed 1st; whilst Miss Owen, Old Heath, won in the Novice class.

In the class for one bunch each of lavender, pink, and white varieties, Mr. L. Webb was again successful, his bunch of King White securing the Silver Medal offered for the premier bunch in the show.

Mr. W. H. Holloway, of Port Hill Gardens, staged 24 fine bunches, not for competition; whilst Messrs. Jones and Sons staged 80 bunches of Sweet Peas and a large exhibit of Carnations.

BISHOP'S WALTHAM.

July 29.—The 40th annual show of the above Society was held in the Palace Ruins on the 29th ult., and was a success. Floral decorations are a special feature of this exhibition and substantial prizes were offered.

This year the height of the decoration in the leading class was restricted to 18 inches, which entirely did away with the use of the tall rustic stand, and as bowls were used in all cases the effect was charming, and well merited the innovation. Vegetables also were a distinct feature. The Hon. Secretary is Mr. E. Molyneux, who has held the office for thirty-two years.

For a decorated dinner table 6 feet by 3 feet, Orchids excluded, there were seven entrants. Five employed Roses, and as all were well arranged, the general effect was charming. Miss G. Saunders, Crumpherne, Fareham, was placed 1st with a low bowl as a centrepiece and four low corner vases all filled with Roses Irish Fireflame, Old Gold and Mme. E. Herriot, with tinted Rose foliage enlivened here and there with richly tinted Hornbeam and Acers. 2nd, Mrs. A. R. Bide, Highlands, Guildford Road, Farnham, with a bright and light arrangement in three low bowls of Roses, but somewhat marred by the too plentiful use of trails of bronzed Selaginella. 3rd, Mrs. E. Burnett, Holly Lodge, Westwood Road, Southampton, with Rose Mrs. A. Tate, in superb condition, but slightly overcrowded with its own foliage in the centre piece. There was a class for a similar-sized table decorated with Orchids, but one exhibitor, Miss Taylor, Bemerton Rectory, Salisbury, competed. The first prize was awarded for a pleasing display of Cattleyas, Oncidiums and Odontoglossums, relieved with Asparagus and grasses.

In the class for a table of Sweet Peas Mrs. C. J. Flight, Southdown House, Shawford, Winchester, won easily with the pink variety Hercules, lightly arranged with Gypsophila.

Nine competed in the class for a vase of flowers, and again Miss Saunders excelled, using pink Carnations, Asparagus trails and richly coloured sprays of Hornbeam. 2nd, H. W. Brodhurst, Esq., Parklands, Botley (gr., Mr. W. Regan).

Miss Saunders also won the premier award in the class for a basket of flowers with a mass of Rose Mme. Mélanie Soupert arranged with the coloured sprays of Rosa rubrifolia. 2nd, Mrs. Burnett, with Rose Lady Ashtown—a rich mass of colour.

Vases of Carnations, arranged for effect, made a pleasing display. The premier award was won by Mr. G. F. Bealing, Bassett Nursery, Southampton, with a new variety, Mrs. F. G. Bealing—deep cerise colour with a flush of salmon and delightfully perfumed. 2nd, Mrs. H. H. Saunders, Wallington, Fareham, with Beacon.

Mrs. Flight had the best arranged vase of Sweet Peas, the variety being Hercules.

Mrs. Bide showed the best bowl of Roses.

The exhibits of fruit were of good quality, but not numerous. For four dishes W. H. Myers, Esq., Swanmore House, Bishop's Waltham (gr. Mr. G. Ellwood) led with good Peaches, Nectarines, and a Melon. The best four dishes of hardy fruit were shown by R. W. Bamforth, Esq., Northbrook House, Bishop's Waltham (gr. Mr. Fursey).

Vegetables.—Messrs. Toogood, Southampton, Messrs. Sutton and Sons, Reading, Messrs. J. Carter and Co., Raynes Park, and Messrs. E. Webb and Son, Wordsley, each offered prizes for six dishes, all of which produced good exhibits. Mr. Myers, in all four classes, was well ahead of his competitors, showing superb Onions, Peas, Potatos, Carrots, and Tomatos.

Mrs. Macrae, Meonstoke House, Bishop's Waltham (gr. Mr. H. Childs) won the 1st prize in Messrs. Hillier and Son's, Winchester, and Messrs. Daniels Bros.', Norwich, classes for six dishes, with excellent produce.

AYRSHIRE SWEET PEA AND ROSE.

July 25.—The first annual show of this Society was held at Irvine on the 25th ult., the opening ceremony being performed by the Countess of Eglinton. The show was a great success, notwithstanding the cancelling of many entries owing to the cold, wet weather experienced in the West of Scotland during last week. It is intended to make this show a movable one, and it is proposed to visit the more important towns of the county in turn. In order to promote a greater interest in the Society arrangements have been made to visit several noted gardens in the district during the summer and autumn months, and a course of lectures has been fixed for the winter. The Society is fortunate in having a very active and progressive executive. The attendance at the first show was most gratifying and very encouraging to the promoters.

The most important class was for twelve vases of Sweet Peas, distinct varieties, the premier award being the Atlee Challenge Cup, presented by Messrs. W. Atlee, Burpee and Co., Philadelphia. The winner was Major Cowdy, Loughall, Co. Armagh, who staged flowers in fine condition and in brilliant colour. Audrey Crier, Dobbie's Lavender, George Herbert, Marks Tey, and King White were notable varieties. He was closely followed by Mr. Edward Smith, Old Cumnock, who showed grand examples of May Campbell and Dobbie's Cream. 3rd, Mr. George Bowness, Riverside Nursery, Busby. In the class for six vases Major Cowdy was again successful, followed by Mr. John Smellie, Pansy Gardens, Busby, and Mr. Geo. Bowness, in the order named. There were many smaller classes, in all of which there was keen competition. For a table decoration of Sweet Peas Mr. G. Anderson, Darvel, was placed 1st; Miss Smelle, Irvine, 2nd; and Mr. G. McAlpine, Largs, 3rd. The Rose classes were keenly contested. In the class for 24 blooms, distinct, Messrs. T. Smith and Sons, nurserymen, Stranraer, won the 1st prize, Mr. Frank Watt the 2nd, and Mr. John Houston, Kilbirnie, the 3rd.

The National Sweet Pea Society's medal, offered for the best vase of Sweet Peas in the show, was awarded to Mr. D. Smith for the variety May Campbell, and the medal for the best Rose was awarded to Messrs. T. Smith and Sons for a bloom of Horace Vernet.

Non-Competitive exhibits were a feature of the show. A gold medal was awarded to Messrs. Dobbie and Co., Edinburgh, for Sweet Peas, and a similar award went to the same firm for an exhibit of Roses and Border Carnations. Gold medals were also awarded to Messrs. Smith and Sons, Stranraer, for Roses, and to Messrs. Malcolm Campbell, Ltd., Glasgow, for floral decorations. The Killermont Nursery Co., Glasgow, staged Roses and Carnations, and were awarded a silver medal, whilst a similar award was made to Messrs. Gemmell Bros., Kilwinning, for Roses.

ROYAL HORTICULTURAL OF VICTORIA.

At the May meeting of this Australian Society an instructive lecture on Apples was given by Mr. E. E. Pescott, secretary of the Pomological Society of Australasia and Principal of the School of Horticulture, Burnley, Victoria. As there are close on 500 varieties of Apples grown at Burnley, the remarks of the lecturer may be taken as well founded.

First, the standard Apples of present-day commerce were reviewed as to their suitability to the Australian climate and soil, and the opinion was expressed that Cox's Orange Pippin, Esopus, Spitzenburg, Five Crown or London Pippin, Annie Elizabeth and Cleopatra would be eliminated from the list of varieties grown for export on account of various defects, such as shy bearing, liability to bitter pit, and crinkle. Of the European Apples, Reinette de Canada was mentioned as the one most likely to meet with extended cultivation. The new American Apple Delicious was referred to as being bad in shape and deficient in flavour; Jonathan was selected as the best export Apple at present, mainly on account of its adaptability to all soils and situations, its good colour and shape and free bearing qualities.

A collection of new varieties of Apples was staged, and their value dealt with, those especially recommended being Tasma—almost flat, with brilliant dark colouring all over. Its flavour was stated to be excellent, and its keeping qualities as extra good. This Apple is much in favour with Apple growers in Tasmania, where it was raised. Granny Smith is very similar to Cleopatra in size, shape and colour; so far it has shown no signs of "bitter pit" in New South Wales, where it was raised, or in Tasmania. Early in the season this is a splendid culinary Apple, and later it is unequalled for dessert. The lecturer considered Granny Smith as the coming Apple for export.

Japean, a similar shaped Apple to Jonathan, but larger and less highly coloured, is said to possess good keeping qualities and most excellent flavour. Others dealt with were Cleorome, a seedling from Cleopatra × Rome Beauty, with the size and shape of the former and the flavour and keeping quality of the latter; so far this variety has shown no inclination to bitter pit. Glengyle, a bright red Rome Beauty, was said to be excellent in every way, but has not yet been tested for commercial use. King David, a much boomed Apple which, like Yates, lacks size unless grown on very rich soil, was declared to be of very poor flavour unless allowed to ripen on the tree, its chief merit being its early season of colouring, which allows it to be exported two or three weeks ahead of any other Apple.

The lecture was followed by a short discussion, in which Mr. Pescott's remarks were upheld by some commercial growers, and the present system of packing and exporting Apples in Australia was classed as obsolete when compared with American methods. *Gilbert Errey, Errey R.O., Victoria.*

GENERAL BULB GROWERS OF HAARLEM.

The following awards were made at the meetings of this Society in February and March, 1914:—

First-Class Certificates.

Hyacinth Parsifal (single, bluish lilac); *H. Graf Zeppelin* (single, lilac). *Narcissus Princess Juliana* (trumpet yellow, perianth clear yellow); *N. Stolberg* (cup light yellow, perianth white); *Freesia Tubergeni Blue Beard.*

Awards of Merit.

Hyacinth Netty (single, dark blue); *H. President Faure* (single, light blue); *Narcissus Sir Dighton* (trumpet dark yellow, perianth pale sulphur); *N. Titan* (dark yellow tube, perianth soft yellow); *N. polyanthus Albanie* (cup dark yellow, perianth white); *N. p. Bulgarye* (cup dark orange, perianth clear yellow); *N. p. Montenegro* (cup orange, perianth creamy-white); *N. p. Roemenie* (cup canary-yellow, perianth white); *N. p. Servie* (cup yellow, perianth light yellow); *N. Kingdom* (cup canary-yellow, perianth white); *N. Croesus* (cup orange, perianth canary-yellow); *N. Dosoris* (cup orange-red, perianth white); *N. Epicure* (cup dark yellow, perianth creamy white); *N. poetaz Quo Vadis* (cup orange, perianth white suffused with golden yellow); *N. Sassenheim* (trumpet golden yellow, perianth white); *N. Pink Pearl* (cup creamy white, with rosy sheen, perianth white); *Freesia Tubergeni Appleblossom* (white suffused with rose); *F. T. Canari* (sulphur-yellow, spotted with orange); *F. T. la Géante,* raised from seeds; *Tulip Pelikaan* (white sports from S. E. T. La Reine); *T. de Ryzender Zon*; *T. Diana* (white).

Awards made in June:—

First-Class Certificates.

Eremurus Warei (yellowish brown); *Gladiolus Carnaval* (salmon-rose, white white spot, bordered with carmine); *G. Incendie* (light scarlet, shaded salmon); *G. Intensité* (orange-salmon); *Iris anglica Elf* (lilac-rose); *I. a. Fairy* (pearl-blue); *I. a. The Giant* (standards purplish-blue, spotted with dark blue, falls dark sky-blue, spotted with indigo); *I. Hart Nibbrig* (dark violet-blue, with orange-yellow spot); *I. van Goyen* (dark violet-blue, the falls sky-blue, with yellow spot); *I. hispanica Rossini* (standards pure white); *Paeonia sinensis Solange* (soft rose).

Awards of Merit.

Anemone double Fürst Bismarck (blue); *Eremurus Warci var. Carneus* (salmon-rose); *E. W. var. luteus* (clear yellow); *E. W. var. sulphureus* (sulphur-yellow); *Iris. anglica Loveliness* (bluish-lilac); *I. Huchtenburg* (standards white shaded blue, falls yellow and orange); *I. filifolia Celestial* (standards dark violet, falls blue and yellow); *I. f. C. v. d. Windt* (white, with small yellow spot); *I. hispanica Mozart* (standards clear mauve, falls white with yellow spot); *I. h. Princess Juliana* (standards clear blue, falls creamy-white and yellow); *Lilium Marhan* (L. Martagon × L. Hansonii (cinnamon-yellow spotted brown); *L. parda-boldtii* (pardalinum × L. Humboldtii) (golden-yellow, spotted brown, with rose sheen); *Primula Bulleyana* (copper-yellow); *Pyrethrum hybr. gl. pl. Queen Mary* (rosy-red); *Ranunculus Turban grandiflora Arabella* (shaded salmon); *R. T. grandiflora Zulu* (dark violet); *Trollius pumilus yunnanense* (golden-yellow).

The following Awards were made at the meetings in May:—

First-Class Certificates.

Tulip Sirene (single, bright satin-rose), from seeds; *Iris ib-macrantha* (standards violet, falls purplish-brown, spotted dark blue) *I. Regelio-Cyclus Artemis* (standards violet and purple, falls dark violet); *I. R.-C. Luna* (standards red, shaded violet, falls clear violet, veined and spotted with dark purple); *I. R.-C. Sirene* (standards light lilac with darker veining, falls creamy-white, veined velvety-brown and black); *I. (Dutch) Jan de Bray* (standards clear yellow, falls dark yellow, spotted with orange).

Awards of Merit.

Freesia Tubergeni Preciosa (mauve, white and yellow); *Tulip Eclipse* (Darwin, brownish-red); *T. Dido* (soft orange-red); *T. Jupiter* (clear carmine-rose); *T. Artemis* (dark red); *T. Adonis* (clear rosy-red); *T. Hebe* (orange-red); *Astilbe Mont Blanc* (creamy-white); *Iris Regela-Cyclus Hecate* (standards purplish-rose, falls creamy-yellow, veined with brown); *I. R.-C. Kolyados* (standards lilac, veined violet, falls sulphur-yellow spotted with purple); *I. R.-C. Theseus* (standards greyish-yellow, shaded lilac, falls creamy-white, veined with brown); *Tulip Epicure* (dark bronze); *T. Sensation* (Parrot); *T. Ronald Gunz* (Darwin, dark lilac, with white border); *T. Pluto*; *T. President Taft* (Darwin, brown, with scarlet border); *T. Leda* (rosy-red); *T. Eleric* (Rembrandt, rose, flamed white and red); *Iris Regelio-Cyclus Andromache* (standards and falls lilac); *I. R.-C. Mars* (standards and falls white, veined with light and dark violet); *I. David Bles* (Dutch, standards blue, falls pearl-blue and yellow); *I. tingitana Princess Juliana* (standards dark blue, falls pearl-blue spotted with orange); *Tulip Inglescombe Yellow*; *Eremurus Tubergeni*

(E. Himalaicus × E. Bungei, clear yellow); *Iris germanica Oriflamme* (standards light violet, falls dark violet); *I. pallida Caprice* (purplish-lilac); *I. plicata Jeanne d'Arc* (white and clear blue); *I. Kaspar Netscher* (lilac spotted with orange); *I. Adr. van de Velde* (standards indigo-blue, falls sky-blue); *I. sambucina Eldorado* (standards bronze and lilac, falls violet and yellow); *I. variegata Iriskönig* (standards bronze and yellow, falls velvety brown); *I. Purity* (standards white, falls creamy-white); *I. Grand Lilac* (standards mauve, falls lilac); *Lupinus polyphyllus Pink Beauty*, *L. p. Salmon Queen*, and *L. p. Sky Blue*.

DEBATING SOCIETIES.

WARGRAVE AND DISTRICT GARDENERS'.—The members of the above association were highly favoured in having two invitations to inspect gardens. The first was given by Mr. C. E. Keyser, J.P., of Aldermanston Court, near Reading, and about thirty availed themselves of the privilege on July 22. Mr. A. Galt, the gardener, welcomed the party, and Mr. Greatrix (the foreman) conducted them through the gardens. The second outing took place on July 29, when forty of the members visited "Parkwood," the residence of Sir Charles Henry, Bart., M.P. They were met by Mr. R. Doe, the gardener, who conducted them through the pleasure grounds, rock garden, kitchen garden, and glasshouses.

BRISTOL AND DISTRICT GARDENERS'.—The monthly meeting of this Association was held at St. John's Parish Rooms on Thursday, July 30. Mr. R. Jennings presided. Mr. Extence read a paper on "Roses." He gave much useful advice on the culture of Roses, including such details as planting, pruning, and remedies for pests and diseases.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* write the names of persons and places as legibly as possible. *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. C. Pengelly, for the past 3 years Foreman to Mrs Marling, Clanna, Lydney, Gloucestershire, as Gardener to Dr. Cropper, Mount Ballan, Chepstow, Monmouthshire.

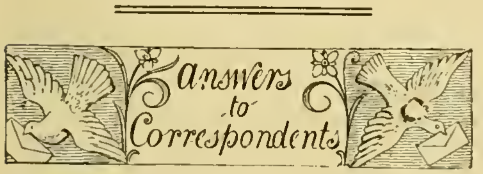
Mr. E. Matthews, until recently Gardener to Gerard Craig Sellar, Esq., Ardtornish, Morvern, Argyllshire, as Gardener to Miss Webb, Newstead Abbey, Nottingham.

Mr. George Fallow, for the past 3 years Assistant in the Royal Botanic Gardens, Edinburgh, and previously at the Gardens, Mauldslie Castle, Carluke, as Inspector in Horticulture under the Board of Agriculture, stationed at New Castle.

Mr. H. Pennells, for the past 2 years Gardener to C. G. Turberville, Esq., of Tilton Catsfield, Battle, Sussex, as Gardener to J. Radley Eddison, Esq., Friezley House, Cranbrook, Kent.

Mr. W. Ward, for the past four years Gardener to Dennis Neale, Esq., Bucklands, Teddington, as Gardener to J. B. Wimble, Esq., Merrow Mount, Huntercombe, Henley-on-Thames.

Mr. R. Pearson, for the past ten years Gardener to W. H. Allen, Esq., Eversley Hall, Brackley, Northamptonshire, as Gardener to Lady Broun, Astrop Park, King's Sutton, Northampton.



Answers to Correspondents

Alpines for Crevices of Rockery Facing South: *Wicklow*. For rock crevices facing south, exposed to keen winds from the east and near to the sea, it is difficult to select many subjects, but we have found that the following do well. The great difficulty lies in establishing the plants. They should be planted when small, and a few small plants in one crevice will be more likely to succeed than a larger, single plant. Acaena, Achillea tomentosa, A. argentea, A. serbica, Alyssum montanum, A. serpyllifolium, Antirrhinum, Armeria, Aubretia, Campanula caespitosa, C. rotundifolia in variety, C. carpathica, and C. garganica, Cerastium, Arabis, Centranthus ruber, Cineraria maritima, Cheiranthus, Corydalis lutea, Dianthus, omitting D. alpinus and D. neglectus, the most suitable being D. deltoides, D. caesius, D. graniticus, and the varieties of D. plumarius, with the single variety of D. caryophyllus, Erinus alpinus in variety, Geranium sanguineum, Geum reptans, Helianthemum, Hypericum reptans, H. repens, H. fragile, and H. humifusum, Iberis sempervirens, Linaria Cymbalaria, Linum alpinum, Lotus corniculatus plenus, Potentilla dubia, Rosmarinus prostratus, Santolina incana, Saponaria ocymoides, Saxifraga of the encrusted and London Pride sections, Sedum, the commoner Sempervivums, Silene maritima fl. pl., Thymus in variety, especially of the Serpyllum type, Tunica Saxifraga, Veronica saxatilis, and Zauschneria californica. The success of such a planting is necessarily dependent on weather conditions, and a loss of some of the plants at first is unavoidable.

Antirrhinums Failing: *W. H. S. and Co.* A fungus, Thielavia basicola, has destroyed the roots. Sterilise the soil before planting again.

Begonia: *E. S.* The plants are infested with Begonia mite. Sponge the leaves, or better, immerse the plants in a solution of Quassia, but do not wet the soil.

Begonia Dying: *Bulletin.* The plant is not affected with disease due to either fungous or insect pest. The cultural treatment has been at fault.

Gladiolus: *C. Osborne.* We have submitted the corms to a critical examination and can find no trace of disease. The unsatisfactory condition of the plants must be due to some wrong cultural treatment or unsuitable soil.

Gooseberries Diseased: *J. J.* The plants are not affected with the American gooseberry mildew. The fungus on the shoots, a Phoma, is harmless. — *S. W.* The plants are affected with English mildew, which is not so troublesome as the American mildew. Infected berries should not be used for consumption.

Growing Early Vegetables Under Glass: *A. G.* Most vegetables succeed admirably under glass, but the majority resent hard forcing, and air must be admitted freely on all favourable occasions. Climbing French Beans are among the most profitable. The plants should be raised in small pots, planted out thinly early in February, and trained to supports near to the glass. A temperature of 55° to 60° is suitable. Potatos for very early supplies are best grown in large pots or shallow boxes in heated houses, choosing small top, early varieties. For successional supplies these may be grown in heated pits or portable frames, but very little or no bottom heat should be used, but the frame must be made frost-proof. Lettuce should be sown the first week in December, raised in boxes in gentle heat, planted out at the end of January in portable frames on the mildest of hotbeds close to the roof-glass, and afforded air on all favourable occasions. Commodore Nutt is a good variety, and will succeed all the year round. Of Spinach it is not necessary to grow only the prickly kind; in fact, the round-seeded, broad-leaved varieties, such as "The Carter," are to be preferred. The seed may be sown thinly at any time in cold frames in fairly good soil near to the roof-glass in a sunny, open position from October to March. Splendid results are obtained thereby; in fact, the large quantities of leaves that may be picked from plants in a two- or three-light frame is surprising. Apply soot on frequent occasions as a deterrent to slugs and a stimulant to growth. Peas are not nearly so prolific as climbing Beans, but at the same time if room permits they are well worthy of growing for a supply of pods early in May. Sow the seed thinly in 8-inch or 10-inch pots early in November in good houses or frames. Never allow the plants to become drawn, and air must be admitted at all times, and more especially when the plants are in full active growth, also during the time they are in flower and setting their fruits. Choose for this sowing varieties of a medium height and of a strong habit.

Holly Hedge: *Interested.* Holly hedges should be clipped annually in September or October, and the bottom must be kept clear of weeds and dead leaves at all times. The latter is important as a considerable quantity of dead leaves fall each year, and if not cleared away they will, in course of time, accumulate to a depth of 2 feet or more, and make the bottom of the hedge thin and weak, even if they do not kill the plants outright. A top-dressing of rich soil and manure in equal quantities is beneficial if applied every second or third year. If the hedge is more than 8 feet in height we should recommend the top to be cut narrower than the base. By doing this the bottom of the hedge will be much better furnished. The brown patches in your hedge are due to dead plants or branches. These should be grubbed out or cut away, as the case may be, and the spaces filled with new plants of a suitable size, or, if it is not possible to replant, the branches by the sides of the gaps should be drawn together as far as possible, when, in the course of time, they will fill the empty spaces.

Melon Leaves and Stem: *T. W. C.* Cucumber canker is not the cause of the trouble. The injury is due to scorch. Ventilate the house well early in the day.

Melons Unhealthy: *J. M.* The trouble is not due to eelworm, but melon canker. There is no known means of saving infected plants. Take the precaution to sterilise the soil before using it again.

Names of Plants: *F. N.* (*Kent*). 1, Abies Nordmanniana; 2, Abies numidica; 3, Cedrus Deodara; 4, Cupressus Lawsoniana; 5, Thuya plicata; 6, Hypericum Androsaemum.—*T. H. C.* (*Darlington*). 1, Tsuga Pattoniana; 2, T. Pattoniana glauca; 3, Taxus baccata expansa; 4, Picea pungens; 5, Libocedrus decurrens. *Wermhite.* 1, Spiraea palmata; 2, Thymus Serpyllum; 3, Zauschneria californica; 4, Daboëcia polifolia; 5, Gypsophila prostrata; 6, Androsace lanuginosa.—*W. J. B.* 1, Morina longifolia. Please send fresh specimens of the others.—*H. Venn.* 1, Veronica Traversii; 2, V. Kirkii; 3, Campanula sp.; 4, Cynoglossum Wallichii; 5, too far withered to recognise; 6, Thalictrum flavum. *W. A. T.* 1, Aloë sp.; 2, Sedum rupestre; 3, specimen too scrappy; 4, Aloë sp.; 5, Tolmiea Menziesii; 6, Mesembryanthemum sp. cannot name without flowers.—*Rosetta.* We do not recognise the variety of Pelargonium.—*F. T. Deven.* Cassinia fulvida, often called Diplopappus chrysophyllus in gardens.—*A. M. S.* 1, Tradescantia virginica; 2, Corydalis lutea; 3, Campanula rapunculoides; 4, Aster serotinus.—*W. & S., Ltd.* Armeria cephalotes rubra.

Onions Diseased: *T. S.* Onion mildew is present. Spray the plants at intervals with a solution of sulphate of iron—1oz. in 1 gall. of water.

Peach: *Whermite.* The trouble is due to shot-hole fungus. It is late to spray now, but try liver of sulphur, 1oz. in 4 galls. water. Spray next spring when the leaves are unfolding.

Peaches: *H. B.* The fruits when received were in a condition of pulp; send fresh specimens in an earlier stage of the disease.

Pear Leaves: *H. C. D.* The leaves are not diseased; their unhealthy condition is most probably due to weather influences.

Perpetual-Flowering Carnations: *Hendon.* You would require at least two houses of the dimensions given in your note to bring you the annual profit mentioned. Much depends upon the cultural knowledge possessed by the cultivator. Houses from 24 feet to 30 feet wide, with front ventilating sashes from 24 inches to 30 inches high from the wall plates, would answer your purpose much better than the width you mention in your note. The front ventilating sashes would admit of all the plants staged close up to the front having ample head-room to develop their flower spikes. In houses of the width indicated you would require individual widths of staging to run the entire length of each house, with narrow pathways—about 2 feet wide—to admit of the cultivator attending to the requirements of the plants on each section of staging. In addition to the varieties given in your letter we should advise you to include in your list Pink Enchantress, Mary Allwood, Gorgeous, Mrs. A. F. Dutton, Lady Northcliffe, Lady Alington, Gloriosa, R. F. Felton (all pink varieties of slightly different shades of colour); Scarlet Glow, White Perfection, and White Wonder.

Pockets for Alpines on Steep Banks: *Wicklow.* You do not say if the banks are soil or rock. If the former, the best way is to insert stones firmly along the bank at intervals so as to form ridges, and to fill the vacant space between the stones and the slope of the bank behind with suitable compost. The stones may be either in continuous ridges or form irregularly-shaped pockets with smaller stones at the sides to retain the soil. If the bank is of rock it will be necessary either to cut away the rock so as to make pockets, which must be drained below, or to fix pieces of rock or stones with cement to the face of the bank so as to form them. A great point is to make the pockets appear as natural as possible.

Roses Diseased: *G. H. B.* The plants are affected with the fungus Actinonema rosae. Spray them with liver of sulphur. It is late now to commence, but next season spray when the leaves are unfolding. Be careful to collect and burn all fallen diseased leaves.

Roses: *A. O.* We do not undertake to name varieties of Roses, but if the specimens are packed so that they arrive fresh, we do our best to help correspondents. In your case the flowers were withered, and the frail box without any packing was quite unsuitable. The white flower is the double variety of Spiraea Ulmaria.

Rhododendrons Poisonous to Animals: *J. S.* Rhododendron as well as Azalea and Andromeda has been found to contain a poisonous glucoside called by Plugge andromedotoxin, which appears to be present in many genera and species of the Ericaceae. Rhododendron californicum has been reported as poisonous to sheep in Oregon, and R. maximum as fatal to stock in the Alleghany Mountains. The symptoms manifested by cattle and sheep, as given in Lander's *Veterinary Toxicology*, are intense pain, diarrhoea, gritting of the teeth, salivation and frequent vomiting. There is suppression of milk, trembling spasms, vertigo, loss of power, and death. In calves, where no vomiting or diarrhoea was present, there was disinclination to move, staggering and reeling gait. Brandy and opium have been given in veterinary practice as antidotes. Cases of poisoning of animals are recorded in the *Veterinary Record*, 1900, p. 326; 1906, p. 631; 1907, p. 4. The poisonous principle also affects goats. A goat after eating a few leaves of a Siberian Rhododendron was observed to totter and fall on its knees, and did not recover for two hours. The poison andromedotoxin appears to occur even in the honey of the plants, since the honey that poisoned Xenophon's soldiers is said to have been derived from species of Rhododendron (probably Rhododendron ponticum). Poisonous Trebizonde honey collected by bees from the above-named plants, which is still sold in Turkey for nefarious purposes, and is known by the Turks as "Deli kal," i.e., mad honey, was chemically examined and reported on by Dr. Thresh, who found it to contain a poison giving the poisonous effects of andromedotoxin. An account of his experiments is published in the *Pharmaceutical Journal*, 1887, p. 397. It will be wise to keep all ericaceous garden shrubs out of reach as far as possible from grazing animals and poultry, since even the flesh of partridges that have fed on the berries of Kalmia latifolia has been found in the United States to be poisonous to human beings who have eaten it (*American Jour. Pharm.*, x. 241). Kalmia angustifolia, Linn., is known as "Sheep's poison" and "Lambkill" in the United States, and Andromeda mariana, Linn., or Stagger bush, is reported to be poisonous to lambs and ewes. See also note on "Poisoning by Rhododendrons" (*Gard. Chron.* p. 254, April 11, 1914).

Sand Tennis Court: *C. S.* Sea sand, whether rough or fine, is usually more uniform in grain than pit sand, but it rarely has any binding property; whereas pit sand, though less regular in grain, usually contains a quantity of earthy matter, which tends to bind the particles together, an important factor in the formation of a smooth, firm surface; while it also possesses the further advantage of being less liable to be blown by wind. While confessing that we have never seen a good tennis-court surfaced with sand, and having some doubt of the value of such a surface for the present-day style of play, we must assume that you only require that material to finish the court. Therefore, under such circumstances, we would make the court in the orthodox manner—i.e., level the area required, say 100 feet by 50 feet. If the subsoil is gravelly, no drainage will be required, and the gravel will only require beating and rolling before the surface coating is put on. Should the subsoil be wet or clayey it will be necessary to drain it, using ordinary 2½-inch agricultural field tiles with 4-inch leaders. Make up the bottom layer with any handy rough material, such as stones, gravel, clinker or ashes. As this layer is of the utmost importance in the formation of a satisfactory court, see that it is uniform in thickness, well packed, and perfectly level. Over this foundation layer place another of finer material to the depth of 2 inches. The material may be broken stone or bricks, or mixed gravel, or ashes; but all must pass easily through an inch mesh. This layer must also be well and evenly laid, firmly packed, and beaten or rolled, then blinded with a thin layer of clayey earth to form a good bed for the surface layer of sand, which should not exceed 1 inch in depth when finished. This layer must of necessity be carefully treated, and, after levelling, be watered and rolled until the surface is sufficiently firm. In exposed situations, some difficulty may be experienced in keeping a pure sand surface sufficiently moist to prevent the sand from blowing away in dry weather. In such a case it may be advisable to treat the surface with some binding solution, such as Mond's calcium chloride, or Rocmac, both of which are easily dissolved in cold water, and the preparations can be applied with an ordinary garden watering-can fitted with a rose, if a water-barrel with spreader is not available. For the surfacing of tennis-courts we have tested various materials, such as engine ashes, red blaes, and red ashes from colliery trugs, refuse from lead mines, and dust from ironstone mines; all, of course, sifted to a uniform grade, and the best in our opinion is the ironmine dust. It dries quickly after rain, does not adhere to the shoes, is of a dull, brown colour, which gives a good contrast with the ball, as well as being pleasant and cool for the eyes in bright weather. The leadmine dust comes next in favour, though its grey colour is not so good for the player.

Stapelia Unhealthy: *Avos.* The trouble is not due to disease, and most probably has resulted from an excess of moisture at the roots. These plants need watering very carefully. An excess of moisture is very harmful. See that the drainage is in a proper condition and that the soil is of an open texture.

Streak Disease of Sweet Pea: *B. J. Raven.* Sweet Pea streak is quite common, and seems to be rather bad this year. Two American investigators, Taubenhaus and Manus, have determined that the disease is due to bacteria. They have named the organism Bacillus Lathyri. It also attacks Clover, Alsike, and several other leguminous plants, and infection mainly takes place through the soil. Taubenhaus and Manus suggest that control measures should be along lines to prevent infected soil being spattered on to the stems during rain, or carried by other means. Probably a mulching of straw several inches thick along the rows may prevent distribution to a certain extent. No cure is known, and so far no immune variety has been discovered.—*M. Prior.* The roots are attacked by Fusarium. The vascular system is affected. It is a soil fungus, and many leguminous plants are attacked by species of Fusarium, which cause wilting. Avoid badly germinating seed. Remove and burn plants as soon as they show symptoms of disease. The haulms of Peas should be grubbed, roots and all, and burnt as soon as possible and not left standing. Do not crop the ground with leguminous plants for a season or two.—*N. E. H. S.* The plants are affected with streak disease. Try watering the roots at intervals with a weak solution of sulphate of potash. See preceding replies.

Transplanting a Holly Hedge: *H. H.* You would not be able to move the Holly hedge with any chance of success unless it was properly prepared beforehand. To attempt to transplant it at once after it has been standing for so long would only result in the greater part, or probably all, of it dying. To ensure safe removal you should, early in October, dig down each side of the hedge about 2 feet to 3 feet from the stems, cutting off all thick roots cleanly, and taking care not to disturb the ball of soil around the plants more than is necessary. All roots beneath the hedge must be cut off and the ground filled in with good fresh soil to which a quantity of well-rotted manure has been added. The plants should then be watered copiously, and left until the following October. By that time the Hollies will have filled the fresh ground with a mass of fine, fibrous roots, which will ensure their safe removal. Hollies under the best of conditions are not good subjects to transplant, and to remove any that have been growing for some years without previous preparation is a waste of time and labour. It would be well if you reckoned the cost of preparing your hedge, and, at the same time, secured an estimate (with a guarantee to replace any dead plants) from some nurseryman. You would probably find it as cheap to have a new hedge entirely as to attempt to remove the old one. October is the best month in which to transplant Hollies.

Variegated Evergreen Shrubs: *Shrub.* Both Aristotelia Macqui variegata and Pittosporum eugenioides variegata are very pretty plants and worth growing, but we should not recommend them for your district, except in very sheltered situations, as they are only half-hardy. Amongst evergreen species there are several good variegated shrubs that we can recommend—viz., variegated Hollies of sorts, Golden Yews, various coloured and variegated Conifers, and variegated tree Ivies. Two small-growing variegated Bamboos are Arundinaria auricoma and A. Fortunei, which are not at all common in gardens. Deciduous shrubs include the Japanese Maples in their various colours, Cornus sibirica variegata and C. alba Spaethii.

Vine Foster's Seedling: *E. W., Haverstock Hill.* The plant is free from disease, and the cause of the unhealthy condition of the foliage must be looked for in some wrong cultural detail which only those on the spot could determine.

Watercress: *A. M. S.* Watercress may be cultivated in a shady part of the garden in the manner you describe, or under glass for salad if sown thickly in shallow boxes, much as Mustard and Cress are sown.

Communications Received.—T. N.—W. C. J.—L. D.—W. G. W.—T. C.—H. R.—C. F. C.—A. T. G.—E. B. W. S.—F. A. E.—J. O. E.—P. A.—H. S. T.—E. P. P.—W. W. & S.—W. A. C.—W. K.—H. E.—F. P.—B. L.—Plan—P. J. W.—F. H.—J. W.—T. H. C.—H. A.—B. C. B.—T. T.—A. & S.—W. B.—F. T.—Conway—A Continental Reader—J. P. H.—A. G.—C. G.—H. C. D.—C. G.—A. O.—H. B.—E. P. D.—J. J.—F. N.—C. O.—J. G.—J. H. B.

THE
Gardeners' Chronicle
No. 1,442.—SATURDAY, AUGUST 15, 1914.

CONTENTS.

Agricultural returns .. 134
Araucaria excelsa .. 129
Australia, vegetation of 133
Barres, the arboretum at 127
Bee, the leaf-cutting .. 137
Bomb in a garden .. 133
Books, notices of—
  Die Orchideen .. 129
  Flora of Aden 129
Buddleia Colvilei .. 127
Crystal Palace as hospital 133
Dawyck, trees and shrubs at 125
Flower Shows abandoned 133
Food supplies, the 133, 137
French horticulture, notes on 127
Fruit crops, remarks on the condition of the 135
Gardeners as soldiers .. 133
Harrow, enterprise at .. 134
Harvest prospects .. 134
Jam, the value of .. 133
Market fruit-garden, the 126
Nursery employees and the war 133
Orchid notes and gleanings—
  Hybrid Orchids .. 126
  Odontonia Macnabiana 126
Papaver orientale .. 132
Paris, the flower trade of 134
Peaches, large 137
Plum La Delicieuse .. 138
Radium and plant growth, experiments with 134
R.H.S. gardens, Wisley, work and improvements at 133
Societies—
  Elgin Hort. 138
  Highland and Agricultural 138
  Killarney Hort. .. 138
  Manchester & North of England 138
Vegetables—
  Celeriac 129
  Tomato Peach Blow .. 129
Week's work, the—
  Apiary, the 131
  Flower garden, the .. 130
  "French" garden, the 131
  Fruit under glass .. 130
  Hardy fruit garden 131
  Kitchen garden, the 131
  Orchid houses, the .. 130
  Plants under glass .. 130
Work that may be done for the general good 132

ILLUSTRATIONS.

Araucaria excelsa in a pot 129
Buddleia Colvilei 127, 128
Leaf-cutting Bee, nests of the 136, 137
Radium, experiments with, at Messrs. Sutton and Son's nursery 135
Papaver orientale Perry's White (Supplementary Illustration).

TREES AND SHRUBS AT DAWYCK.

DAWYCK by Stobo, Peeblesshire, has for two centuries been a place noted for trees, and is several times mentioned by Loudon. Mr. Hugh Boyd Watt, in a paper on "Early Tree Planting in Scotland," and Mr. Balfour Gourlay, in *Trees on the Dawyck Estate* (*Trans.*, Bot. Soc., Edin., xxiii., 1908), have given many details of the old trees there, amongst which the Larch is said to have been introduced in 1725, several years before it was planted at Dunkeld, and two photographs of original trees now remaining are given. A row of very old Silver Firs, probably planted about 1660, of which one is no less than 115 feet high by 15 feet 9 inches in girth at the base, survives; and two venerable Horse Chestnut trees, said to have been the first planted in Scotland between 1660 and 1680, together with a beautiful avenue of Limes of somewhat later date, testify to the love of trees which inspired the former owners. The place from the earliest recorded times was the home of the Veitches, from whom it passed by purchase to the Naesmyths of Posso in the latter half of the seventeenth century, with whom it remained for 200 years, when it again passed by purchase to Mr. F. R. S. Balfour's Trustees; his mother now lives there. Sir James Naesmyth, who died in 1779, was a friend and pupil of Linnaeus, who, it is said, visited the place.

There are some fine specimens of Conifers, amongst which Abies Nordmanniana, A. lowiana, A. magnifica, A. grandis, A. nobilis, Tsuga Albertiana, T. canadensis, Sequoia gigantea, and Pseudotsuga Douglasii are the largest. There are also fine trees of Quercus rubra. All these were planted in the forties and fifties by Sir John Murray Naesmyth.

Perhaps the most remarkable tree is the fastigiate Beech, of which a figure is given in *The Trees of Great Britain and Ireland*, plate 406. It is, so far as I know, the only tree of its type existing in Britain.

But all that has been done to beautify Dawyck in former times is far surpassed by the work of Mr. Balfour. I may safely say that this place now contains a greater number of rare and little-known trees than any that I know of in Scotland, and is likely to become in the future a place of pilgrimage for all lovers of arboriculture. For Mr. Balfour has travelled widely, and has collected trees and tree seeds with such energy and knowledge, especially on the Pacific coast of North America, and has profited so greatly by the friendship and generosity of Professor Sargent, that many young trees and shrubs from China and North America, hardly known as yet in English gardens, are growing and flourishing at Dawyck in a way which astonished me.

Dawyck is situated in Upper Tweeddale, at an elevation of 700 feet, and has a climate reputed to be amongst the coldest in Scotland, but perhaps on account of the lateness of spring there, vegetation suffered far less from the late frosts which devastated so many parts of England in May last, and have left marks which years will not efface in the Midland counties and in my own place. The soil is described as the "blue whinstone" of the Silurian formation, and in the bottom of the valley and round the house is fairly deep and fertile. The grounds are beautifully sheltered from winds, and the stream which runs from the hills behind through the park provides a situation which will some day rival the grounds of Leonardslee. It would be impossible in a brief space to mention more than a few of the rare Conifers, Hardwoods, Crataegus, Roses, Berberis, Rhododendrons and other shrubs which Mr. Balfour has collected in his nursery. It surpasses in interest any that I have seen in Scotland, and does the highest credit to his activity as a collector and to the skill and care of his gardener and forester. Since these lines were written I am pleased to hear that the Royal Scottish Arboricultural Society has honoured this nursery by the award of a gold medal, the highest honour that can be given, and very seldom conferred. Mr. Balfour has realised that the best way to know trees thoroughly and to understand their culture is to raise them from seed at home, and having determined to plant every species that will grow on his estate, he has brought together an unrivalled collection. How far some of the new Conifers introduced by Mr. Wilson from China will prove able to endure the vicissitudes of the climate time alone can show, but many of them are very flourishing at present, and will be planted both as ornamental trees and in the plantations which extend up to 1,200 feet, and already contain many species not often planted as forest trees, such as Chamaecyparis Lawsoniana, C. nootkatensis, and Larix occidentalis. I noticed especially Picea Breweriana, from Southern Oregon, which grows faster here than at Kew, and is a most distinct and graceful tree; Picea obovata and P. Schrenkiana from Russia; Picea asperata var. notabilis, and a species resembling Picea Morinda from China; Picea Alcockiana, true, from Japan; and Picea rubra from Canada; Abies Delavayi, A. recurvata, with many other Silver Firs and Spruces from China. Abies Saghaliensis, A. Hondoensis, and A. amabilis, true, were all unhurt by frost, A. subalpina alone being somewhat injured. Almost every species of Larch, including Larix Potaninii and L. Principis Rupprechtii, are to be seen at Dawyck; but L. Lyalli, from Alberta, and L. Griffithii, from the Himalayas, seem quite unable to grow here; L. kurilensis, though healthy, does not seem quite equal to L. occidentalis in vigour. Of the Birches and Alders the collection is very extensive, amongst the most promising being a Birch known in America as Betula occidentalis, from the Kootenay district, but which Dr. Henry considers to be a form of papyracea; B. Maximowiczi, from Japan, and a Birch from Kansuh not yet named, more thriving here than at Colesborne, where it has been injured by frost. Of Poplars there are several new and rare species from China, and a new one from Vancouver Island. Mr. Balfour finds that Populus trichocarpa is one of the hardiest and fastest-growing of all known trees, and intends, as I do, to plant it largely. Quercus garryana, which in Vancouver Island is the finest Oak, has been introduced by Mr. Balfour, and at present seems to grow better both here and at Colesborne than the other white Oaks. Juniperus scopulorum, Tsuga chinensis, and Tsuga caroliniana are promising young trees, as well as many species of Pyrus, Prunus, Lime, Ash, and Maple.

Of the interesting plantations in which Douglas Fir and Sitka Spruce are largely planted up to 1,000 feet above the sea, I have not time to speak, but I saw enough to be sure that, both from the economic and the ornamental side of the question, Mr. Balfour is well seconded by his forester, Mr. Robert Tindal, as well as by his gardener, Mr. James Simpson. *H. J. Elwes, Colesborne.*

ORCHID NOTES AND GLEANINGS.

ODONTONIA MACNABIANA BRACKENHURST VARIETY (O. EDWARDII × M. BLEUANA).

This hybrid is now flowering in the collection of J. Gurney Fowler, Esq. The inflorescence, which has two branches, is about 18 inches in height, and bears 16 flowers, each 2 inches at the greatest width, and shaped, in a large degree, like Miltonia vexillaria. The sepals and petals are coloured claret-purple, with a very narrow white margin. The lip has a yellow crest, and a white base on which are two thickened lines of dark ruby red colour, with two or three blotches of the same tint on each side, the flat front lobe being rosy-mauve. In habit the plant is intermediate between the parents, but has the pale green tint of those of the M. vexillaria type.

HYBRID ORCHIDS.

(Continued from p. 410, Vol. LV.)

Hybrid.	Parentage.	Exhibitor.
*Brasso-Cattleya Virgo	B. cucullata (cuspidata) × C. Mossiae Wageneri, shown as B.-C. Dora, name appropriated	Messrs. Charlesworth.
Cattleya Astron	Harrisoniana alba × Dusseldorfei Undine	Baron Schröder.
Cattleya Enchantress	intermedia alba × chocoensis alba	Mansell and Hatcher.
Cattleya Irene	Suzanne Hye de Crom × Mossiae Wageneri	J. Gurney Fowler, Esq.
Laelio-Cattleya Brugensis	L.-C. Martinetii × L.-C. luminosa	Sander and Sons.
Laelio-Cattleya Constance	L.-C. Bletchleyensis × C. Mossiae	Flory and Black.
Laelio-Cattleya Canary	L. cinnabrosa × C. citrina	W. H. St. Quintin, Esq.
Laelio-Cattleya Corncrake	L. Gwennie × C. Mossiae Reineckiana	Lt.-Col. Sir G. L. Holford.
Laelio-Cattleya Miss Louisa Fowler	L.-C. callistoglossa × C. granulosa	J. Gurney Fowler, Esq.
Laelio-Cattleya Pallene	L.-C. Pallas × C. Schröderae	Flory and Black.
Laelio-Cattleya Shogun	L.-C. Martinetii × L. tenebrosa	Sander and Sons.
Laelio-Cattleya Whiteae	L.-C. Vinesiae × C. Mossiae	Eustace F. Clark, Esq.
Odontioda Ashtonii	Odm. Armstrongiae × C. Noezliana	E. R. Ashton, Esq.
Odontioda Patricia	Odm. Phoebe × Oda. Charlesworthii	H. S. Goodson, Esq.
Odontioda Rubia	Odm. Vuylstekei × Oda. Charlesworthii	R. G. Thwaites, Esq.
Odontoglossum Lycidas	Andersonianum × amabile	Sander and Sons.
Odontoglossum Marathon	amabile × eximium	Sander and Sons.
Odontoglossum Ortrud	Pescatorei × Queen Alexandra var. Carmen	De B. Crawshay, Esq.
Odontoglossum Paulinus	altum × ardentissimum	Sander and Sons.
Odontoglossum splendens Invincible	eximium × Wilckeanum (Denisoniae)	Sander and Sons.
Odontoglossum Troyanowskiae	Thompsonianum × Rolfeae	Sander and Sons.
Odontoglossum Uro-anthum	Uro-Skinneri × Kegeljani (polyxanthum)	F. M. Ogilvie, Esq.
Odontonia Cleverleyana	Odm. Rolfeae × M. vexillaria Leopoldii	Mansell and Hatcher.
Odontonia Charlesworthii	Odm. Uro-Skinneri × M. vexillaria	Messrs. Charlesworth.
Odontonia MacNabiana Brackenhurst var.	Odm. Edwardii × M. Bleuana	J. Gurney Fowler, Esq., and Sander and Sons.
Vuylstekeara insignis	M. Bleuana × Oda. Charlesworthii	Firmin Lambeau, Esq.

* Brasso-Cattleya Dora (C. Trianae albens × B.-C. Digbyano-Mossiae Queen Alexandra), shown by E. H Davidson and Co. See *Gardeners' Chronicle*, March 8, 1913, p. 158.

THE MARKET FRUIT GARDEN.

Great relief from drought occurred throughout the greater part of July; but dry, sunny weather set in after the 22nd, and, with only slight interruptions, has continued up to the time of writing. The break in the drought did not come soon enough to prevent the dwarfing of early Apples and Plums in my district. The fruit was very plentiful on the trees, and this helped to prevent it from attaining full size. Victoria Plums, although not early, seem likely to be smaller than usual, even where they were moderately thinned. Unless a thoroughly soaking rain comes soon, it is to be feared that late Apples and Plums will fail to attain their full size.

Apples Dropping.

This misfortune was referred to last month, when, however, it had not become very serious. Before the end of July the dropping became very extensive, much fruit of nearly, or quite, full size having fallen. On August 2nd, moreover, a strong and gusty wind brought Apples, Pears, and early Plums off the trees in showers, and prices were so low that it was hardly remunerative to pick damaged windfalls off the ground. Unfortunately, Cox's Orange Pippin and Worcester Pearmain were among the varieties which had much fruit blown down, and this was practically worthless, owing to its smallness and immaturity. The extensive dropping of Apples may be attributed to drought, the ends of the stalks being found dry and brown.

A Bad Start in Marketing Plums.

Probably it is safe to say that since Rivers' Early Prolific Plums were introduced, their starting prices have never before been as low as they were this season. Usually, I have made 4s. 6d. to 5s. per half-sieve of 28lb., and last year, when the crop was extremely short, they realised 8s. at the start. This season it was 4s., a week later the price fell to 3s., and within a fortnight to 2s., or even less. Later sales have been as low as 1s. 6d. Such prices, from which rail and market expenses had to be deducted, were greatly disappointing, as there was a short crop of this variety in many of the principal Plum districts of the country. A glut of fruit from France and two or three other Continental countries must have been chiefly accountable, in the first instance, for the miserably low prices; but other influences, noticed below, soon came into action. Czar also had a very bad start, and there can hardly be much hope of Victoria doing better, although this was one of the varieties most seriously damaged by the spring frosts. Half a crop of Plums in the country at large probably pays growers better than a full crop, because there are the same expenses per half-sieve for picking and rail and marketing, when the prices are 1s. 6d. to 2s. 6d., as when they are 4s. to 5s., at least where commission is charged per quantity.

The War and Fruit Prices.

Up to the present the war has been entirely and very seriously disadvantageous to fruit-growers, in spite of the almost entire suspension of foreign supplies of fruit. In the first place, the great call made upon the railway companies for the movement of troops and materials of warfare prevented for some days the conveyance of empties to fruit-growers, particularly in the South. This led to the spoiling of large quantities of Plums and early Apples. Worse still, because probably permanent, is the greatly reduced demand for fruit, due partly to the feeling that expenses of living must be economised, and partly to the rise in the price of sugar. At the end of last week the prices of Plums and Apples had become extremely low.

A Troublesome Apple.

Of all the varieties of Apples that I grow for market, Beauty of Bath is the most troublesome to secure in perfect condition. If gathered too soon, it lacks colour, and has comparatively little selling value. If left to colour fully on the trees the fruit drops off wholesale. Several times this season my trees have been gone over by the pickers in order to get all the fully ripened fruit off them, and yet on the morning following the picking the ground has been strewn with Apples. The old Striped Joaneting and the small yellow variety of the same name are as bad for dropping, and Mr. Gladstone is bad enough, but not as faulty in this respect as Beauty of Bath. It is further to be observed that the Apples which drop most freely from Beauty of Bath trees are not the most highly coloured, but those which are greenish, though striped, and these the pickers are apt to leave when they are gathering the ripest. My oldest trees of this variety had litter put under them, so that there was less injury done to dropped fruit. A good many Apples, however, were bruised by striking branches as they fell. Litter was not available for trees in other orchards, and there the injury, from dropping, was serious. Besides, dropped fruit gets pecked badly by birds, or eaten by rabbits, and my orchards are not netted all round, the wire netting being around the trunk of each tree. Even varieties which usually hang well on the trees have dropped extensively this season

POLLINATION.

If guided only by evidence obtained in my own orchards, I should say that the fuss made nowadays about self-sterility in many varieties of Plums and Apples is greatly exaggerated, or, at least, that the danger of growing varieties in large blocks is over-estimated. This season Early Prolific Plum trees, 50ft. from any other variety, were loaded with fruit, as much so as trees close to Czar or Victoria. This has been equally noticeable when the previous crop of Prolific was grown. Yet the variety is classed as "partially self-sterile." Black Diamond is the only Plum grown by me which has failed to fruit well when no other variety is close to it. As to Apples Cox's Orange Pippin, Allington Pippin, Beauty of Bath, Worcester Pearmain, and Lord Grosvenor, all grown in large blocks, the trees have set fruit as freely in the middle of each block as at the outsides. Rows 60ft. to 100ft. from any other variety bear, or have borne, as good crops as those next to another variety. In a block of nine rows of Cox's Orange Pippin, with Early Julyan on one side of it and one row of Charles Ross, with Worcester Pearmain next to it, on the other side, the middle row in the block of trees, 12ft. apart, bears as heavy a crop as either of the outside rows. This does not prove that all the varieties are self-fertile, because bees and other insects may effect cross-fertilisation; but it does indicate that the alleged danger of growing the variety in a large block is exaggerated. Pollination experiments with paper bags are carried on under unnatural conditions, and their results do not inspire me with confidence. What is wanted is the systematic observation and recording of the fruiting of trees of different varieties of Apples, Pears, and Plums in large blocks, comparing the cropping on rows furthest from, with that of those nearest to, some other variety under ordinary conditions.

Red Spider on Outdoor Fruit Trees.

Probably in consequence of the warm, dry conditions of the early part of the summer, red spider has caused more damage to outdoor fruit trees than I have ever noticed before. Early Prolific, among Plums, was most badly attacked, and Domino among Apples; and several other varieties of both fruits were injured to some extent.

The Scarcity of Wasps.

By this time in most past seasons wasps have been seen in great numbers, attacking ripe Plums, Apples, and Pears; but at present extremely few wasps have been seen in my orchards. Whether this comparative immunity from the troublesome insect is general, or whether it may be attributed in my case to the persistent destruction of wasps' nests in recent seasons, I cannot say. *A Southern Grower.*

BUDDLEIA COLVILEI.

This plant is a native of Sikkim, Himalaya, growing at elevations of 9,000 to 12,000 feet, and is described by the late Dr. Hooker as the handsomest of all the Himalayan shrubs. It was discovered by Dr. Hooker in 1849, but it does not appear to have become common in gardens. The specimen illustrated in fig. 52 is growing in Messrs. Robert Veitch and Son's nursery at Exeter, where it has withstood 20° of frost.

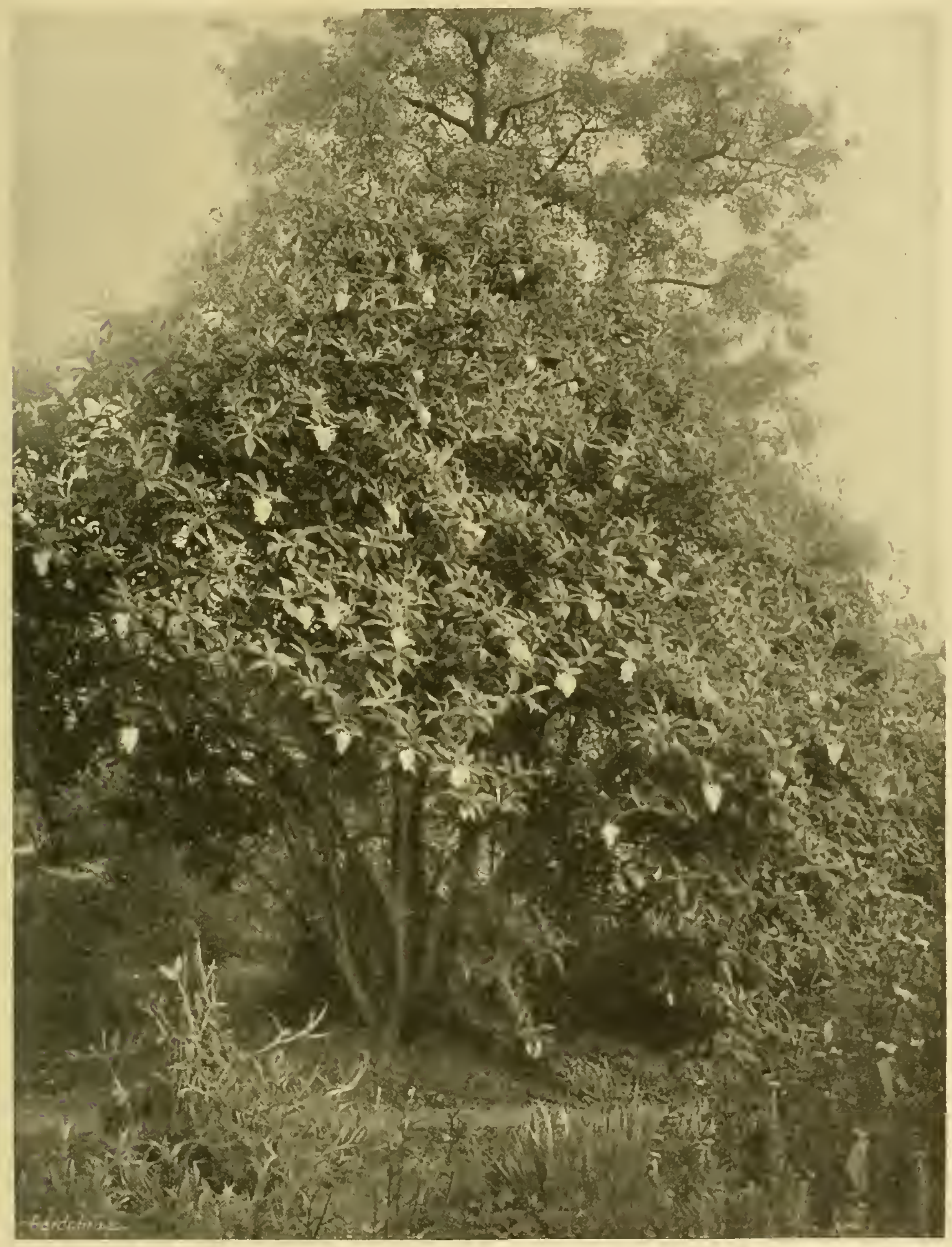


Fig. 52.—Buddleia Colvilei flowering in Messrs. Robert Veitch and Son's nursery, Exeter.

Messrs. Veitch inform us that it was planted in the open in the autumn of 1901, and has reached a height of 16 feet, with a spread of branches measuring 21 feet. At the time when the photograph was taken, the plant was carrying about 300 trusses of beautiful pink-coloured flowers. The leaves are from 5 to 7 inches long, elliptic-lanceolate, dark-green above and pale beneath. The flowers are produced in thyrsiform, pendulous panicles 12 to 18 inches long (see fig. 53) and are coloured rose-purple or crimson, with a white ring around the mouth. The flowering season is June to August. It is interesting to learn that the plant has also flowered well in Sir Archibald Buchan-Hepburn's garden at Prestonkirk, East Lothian. Sir Archibald writes as follows: "Buddleia Colvilei, though flowering annually, has this year surpassed itself, like most other shrubs, and my specimen was a mass of bloom, every shoot bearing a truss: a magnificent sight. Unlike most of its kind, it requires three or four years' growth before commencing to flower. Cuttings do not strike so readily as those of the varieties of B. variabilis. I practically do not prune the plant, which is on a wall. All other Buddleias, except B. globosa, are cut hard back after flowering."

NOTES ON FRENCH HORTICULTURE.

THE ARBORETUM AT BARRES.

The Dendrological Society of France paid on Sunday, June 28, an extremely interesting visit to Barres. This locality, situated in the commune Nogent sur Vernisson (Loiret), at a distance of some 80 miles south of Paris, is of the greatest interest to foresters. The objects of the visit were two-fold, the Arboretum belonging to the State and the Fruticetum of M. Maurice de Vilmorin. The State Arboretum is established on a property that was bought in 1821 by M. André de Vilmorin. It was handed over to the French Government in 1856, and a State school of practical sylviculture was established there. Subsequently a secondary school was founded with the object of giving to foresters the theoretical and practical instruction necessary to enable them to advance in grade. The State forests cover about 150 acres, of which about six constitute the Arboretum proper. This Arboretum contains one of the richest collections of trees in Europe. Adjoining it is an interesting forestry museum. The *Catalogue de L'Arboretum National de Barres*, published by M. Parde in 1906, gives valuable information on the collections and on the observations which have been made at Barres. An atlas of photographic reproductions and plans accompanies the catalogue. From the time of his purchase of the property, André de Vilmorin began planting exotic trees, numerous species of Pinus, Cedrus Libani, Abies Pinsapo, etc., as well as different species of American Oak. The information gained as the result of the planting of Pines of different varieties and origins is well known and has considerable interest. Pinus Laricio (of Calabria), planted between 1823 and 1830, forms at the present moment magnificent groups of trees 80 feet high, straight-stemmed and vigorous. Plantations of a third generation of seeds gathered from these trees have been established. Pinus Laricio (from Corsica) follows immediately after the former as an object of interest. With respect to Pinus sylvestris, the superiority of the race called "de Riga" has been clearly demonstrated. The important plantations of Pinus maritima were severely damaged during the winter of 1879-80, and only a few examples remain. The American Oaks include Quercus alba, Q. aquatica, Q. coccinea, Q. palustris, Q. Phellos, etc. Quercus Barristeri, a small, contorted tree, is completely naturalised at Barres, where it sows itself naturally and makes good cover for shooting, being but little damaged by rabbits. Of Hybrid Oaks, there is a fine example, about 40 feet high, of a hybrid believed to be between Q. alba and Q. bicolor, and also a splendid tree 65 feet high, a cross between Q. rubra and Q. palustris. White Hickory (Carya alba) does extremely well at Barres, and a fine example 40 feet high with a girth of 1 metre gives natural sowings.

The Fruticetum of M. Maurice de Vilmorin is close by the Arboretum, and completes the latter in this sense, that it is almost exclusively devoted to shrubs. It was created in 1894 with the object of continuing the collections got together by Lavallée and Segrez. The Conifers are outside the Fruticetum in a quarter recently established. The collections contain a large number of shrubs introduced directly and for the most part from China, whence seeds were sent to M. Maurice Vilmorin by French missionaries. Many of the new plants that have just been raised have been shown in a young stage at the quinquennial Ghent Exhibitions of 1908 and 1913. The Fruticetum also contains most of the shrubby species introduced recently from Asia, especially those sent by Wilson. Among those noticed during our visit were the series of Lonicera (Chamaecerasus) covered with large numbers of fruits, L. bella with red fruits, and the variety rosea, L. minutiflora with orange fruits, Genista aethnensis, Corylus thibetica, Prunus spinosa with purple leaves, the pretty hybrid Rosa foliosa × Rugosa, and so on. Outside the Fruticetum a specimen of Cercidiphyllum japonicum planted in moist ground forms a fine tree of 1½ feet in circumference at the base. Among the important series of plants the introduction of which into cultivation we

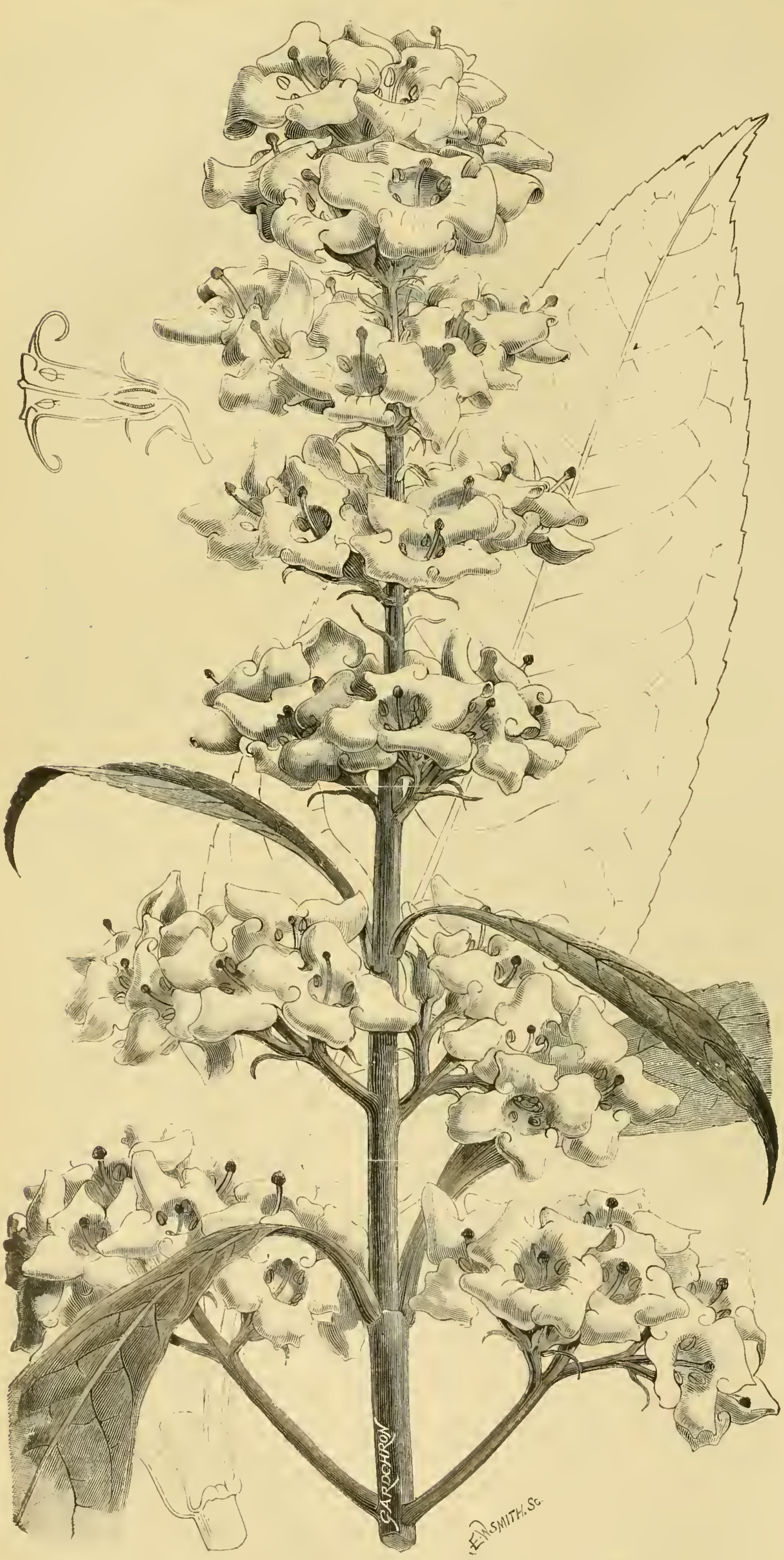


FIG. 53.—BUDDLEIA COLVILEI: FLOWERS ROSY-PURPLE OR CRIMSON.

owe to M. Maurice Vilmorin, may be mentioned Decaisnea Fargesii, Clematis chrysocoma, Eucommia ulmoides, Davidia involucrata, Berberis sanguinea, Ailanthus Vilmoriniana, Sorbaria assurgens, Cotoneaster Franchetii, Sorbus Vilmorini, Pinus Armandii and Osmanthus Delavayi. The Fruticetum is a non-commercial establishment for the introduction and cultivation of wild species, especially of shrubs. An exchange list is published each year and sent to the Botanical Gardens, scientific establishments and collectors. The *Catalogue Fruticetum Vilmorinanum* was drawn up in 1904 by MM. Maurice de Vilmorin and Bois.

LE "BON JARDINIER."

The 150th edition of the *Bon Jardinier* has just been published by the Librairie agricole "de la Maison Rustique." The present edition of this French classic has been entirely rewritten, and in its production some 40 experts have collaborated under the general direction of MM. Bois and Grignan. The volume contains 1,035 pages, and is illustrated by attractive colour-plates. Certain changes have been introduced, for example, calendars, lists of novelties, etc., have been omitted. Since it is no longer the intention to issue a new impression each year, scores of the older generation of French gardeners and many of other nationality will regret, whilst recognising, the necessity for the change. The old-fashioned *Bon Jardinier* is no more, but in its place, and destined for a no less brilliant and useful career, we have the *Bon Jardinier—nouveau style*. This change recalls the fact that the *Bon Jardinier* is one of the works—if not the only one—the uninterrupted publication of which goes back furthest in the history of French bibliography. The first edition appeared in 1754. Since that date, except on five occasions, a new edition has been published every year. The years of intromission were 1815 and 1871—sinister years in French history —1888, 1892, and 1893, during which last three years a general revision of the work was in progress.

Unfortunately the 1st (1754) edition has been lost, but that it appeared is evident from the text of the preface to the 2nd (1755) edition, in which the statement occurs, "the reception that the public has bestowed on the Almanack has determined the author to profit by the comments of experts, both with respect to contents and form. . . ."

Thus it came about that the second edition consisted of 168 pages. The size grew by degrees. In the year of the French Revolution, 1789, the preface states "This Almanack began to appear 25 years ago: without form in its origin, like all things in the cradle, it has developed little by little till now it has reached such strength as to inspire the hope that the public will continue to treat it with benevolent regard. In 1847 L'Abbé Berlese, reporting to the Society of Horticulture of Paris, sang its praises in no uncertain tones." No work on gardening has passed through so many editions, and none has passed into so many languages. It is to be found everywhere —in Germany, England, and Russia. It is the manual of gardening, a classic which will endure always. Time has judged it, and time preserves it.

All the great French horticulturists have written in its pages—Poiteau, Newmann, Pêpin, Naudin, Ed. André, and the Vilmorins.

Its influence on gardening has been great. It is interesting to observe that the oldest French horticultural periodical, the *Revue Horticole*, which first appeared in 1828, was founded by the authors of the *Bon Jardinier*, and was issued at first as a supplement to that work. *A. Meunissier.*

ARAUCARIA EXCELSA.

Araucaria excelsa, the Norfolk Island Pine, is one of the most ornamental of evergreen trees, and is largely grown in pots for decorative purposes in the greenhouse and conservatory. The specimen illustrated in fig. 54 is growing at Trewyn, St. Ives, the residence of Mr. W. Trewhella. About fourteen years ago, we are informed, the tree was about 4 feet high, but it now reaches to a height of nearly 21 feet. The pot is only 16 inches in diameter and the same in depth, yet the plant flourishes and continues to increase. Such a large specimen in a pot needs very careful management, and Mr. Richard Moore, the gardener, is to be congratulated on its healthy appearance. Araucaria excelsa is a native of Norfolk Island, where it forms a large tree. There are several varieties, including some with silvery ends to the branches.

VEGETABLES.

CELERIAC.

Celeriac, or Turnip-rooted Celery, as it is frequently called, is one of the most useful winter vegetables we have. Though it has been cultivated and largely used on the Continent for many years, it has not found the favour it deserves in this country, and it is strange how few of the public even know what it is.

To ensure good-sized bulbs by autumn no time should be lost in planting it on heavily-manured, deeply-stirred ground, allowing about the same distance between the plants as for Celery. Every inducement should be afforded the plants to make a free and uninterrupted growth, affording an abundance of water both to the roots and foliage. Other cultural details include stirring the ground frequently with the Dutch hoe, and applying dressings of fresh soot overhead at least once a week. Attacks of the Celery maggot must be guarded against. Early in November the crop should be lifted, the roots trimmed, and stored in sand in a place where frosts cannot reach them.

TOMATO PEACH BLOW.

Although Peach Blow is by no means a new variety, it is surprising how little it is cultivated, as, in my opinion, it is much the best flavoured Tomato. The colour is perhaps a fault, but in colour the public is prejudiced. As the fruits when ripe appear to be unfinished, this may be excusable in the general public, but to those who grow Tomatos for their own use I strongly advise this variety for planting under glass. In addition to the fruits being of such fine quality, the plant has a good constitution, is a free setter, and the ripe berries keep longer than any other I know. The fruits have a striking appearance on the exhibition table when presented at their best, and always find many admirers. *E. Beckett, Aldenham House Gardens.*

NOTICES OF BOOKS.

DIE ORCHIDEEN.[*]

This excellent work on Orchids, by Dr. Rudolf Schlechter, which is to be completed in ten numbers during the present year, progresses rapidly. Parts 2, 3, and 4 just received confirm the good opinion expressed when remarking on the first issue and giving an outline of the scope of the work in the *Gardeners' Chronicle*, June 13 last, p. 415.

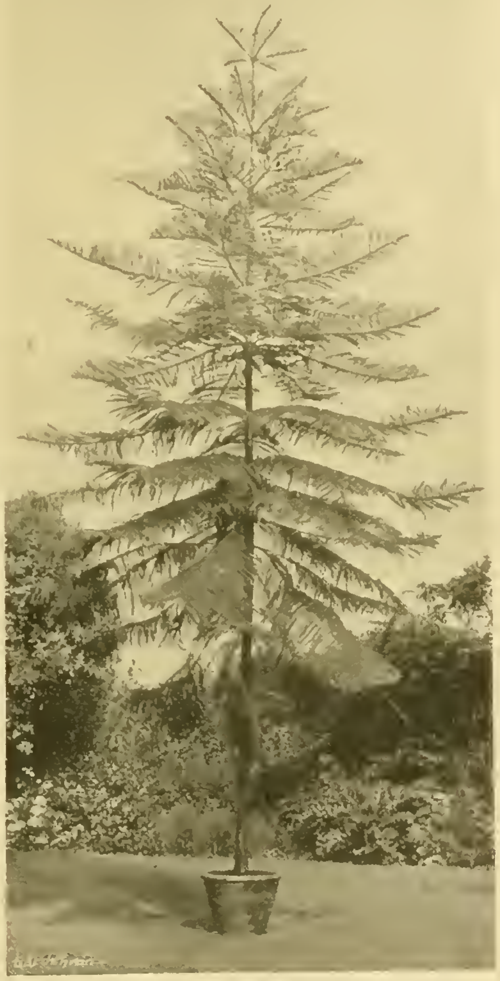
It may prove to be the standard work on Orchids enumerating all the genera and the principal species, with cultural instructions and other matter interesting to the gardener no less than the botanist.

Part II. deals with Vanillinae, Sobraliinae, Gastrodiinae, Spiranthinae, Coelogyninae, Pleurothallidinae, and other groups. There are coloured plates of Cattleya labiata var. Mossiae and Dendrobium Wardianum, and illustrations of twenty other Orchids, including Liparis platyglossa Schltr.

Part III. continues the Pleurothallids, enumerates Ponerinae, the large group Laeliinae, and commences Dendrobiinae.

The coloured plate is of Phaius Tankervilliae (P. Incarvillei O. Ktze.), the species commonly known in gardens as P. grandifolius, and thirty-five species are illustrated.

Part IV. has a coloured plate of Cymbidium Lowianum, and thirty-five illustrations; the Dendrobiums are completed, and the Cymbidium family, Phajinae and Bulbophyllinae dealt with. The work, which so far runs to 336 pages, gives on every page evidence of the careful elaboration to be expected from such a high authority as Dr. Rudolf Schlechter, the enumeration being marked by a praiseworthy recognition of established names, and where a departure has been made, as in the case of Neocoigniauxia monophylla Schlechter for the monotypic species always named Laelia monophylla previously, there is sound reason for it.



Photograph by T. A. Kay.

Fig. 54.—A fine specimen of Araucaria excelsa in a pot.

ADEN.[*]

Aden has the reputation of being the hottest, driest and most barren inhabited spot on the face of the globe; yet it is not unhealthy, and natural vegetation exists in many of the secluded valleys. Mr. Blatter gives his essay the title of "Flora," but it is much more than many works bearing this designation. He opens with the history of the botanical exploration of Aden, beginning with Henry Salt (1809), and continuing with M. P. Edgeworth (1846); R. Roth and J. D. Hooker (1847); R. L. Playfair (1852-1862); J. Anderson (1857); and, missing many less important collectors, G. Schweinfurth, several visits (1881-1889); A. Deflers (1885-1889); J. Lunt (1894); K. Krause (1905). The extent of the collections, where preserved, and the publications, if any, of the collectors, are briefly set forth. These are followed by a definition of the position of Aden, its geology, topography, meteorology and the conditions of plant life. A third section deals with the vegetation from statistical and biological standpoints, the biological notes being especially interesting.

The late Sir Joseph Hooker's description of the vegetation in various localities is reproduced, and it may be added that it has not been superseded by any subsequent contribution to the subject, though further details have been supplied by later travellers. Mr. Blatter's own observations on adaptation, colour of flowers, insect activity, flowering season and climate, are valuable additions. We have little space for extracts, but he says:—"The dominant species which give the vegetation of Aden its characteristic feature are Dipterygium glaucum, Cleome paradoxa, Capparis galeata (Capparidaceae), Reseda amblyocarpa, Sterculia arabica, Cucumis prophetarum, Vernonia atriplicifolia (Compositae), Salvadora persica, Glossonema Boveanum (Asclepiadaceae), Boerhaavia elegans, B. verticillata, Jatropha spinosa, and Euphorbia Schimperi. Neither Fern, nor Moss, nor fungus has been observed in the peninsula of Aden."

Mr. Blatter enumerates 250 species of flowering plants belonging to 138 genera and 55 families. The flora is composed of 136 herbs, 46 undershrubs, 58 shrubs and 10 trees. Of the families 19 are represented by only one species each, 11 by only two, and 9 by three. These are the proportions usually obtaining in remote insular floras. The leading families are:—Gramineae, 33 species; Leguminosae, 32 species; Capparidaceae, 18 species; Euphorbiaceae, 13 species; Boraginaceae, 11 species; Chenopodiaceae, 11 species; and Compositae, 10 species. The endemic element, so far as known, is limited to ten species, but further explorations in the surrounding countries may be expected to reduce this number. Among resiniferous trees are two species of Commiphora (Balsamodendron): Acacia numbers seven indigenous species, and A. arabica and A. Farnesiana have been introduced. The Doum Palm is indigenous and the Date Palm has been planted. The absence of Tamarix and the presence of Ephredra are noteworthy facts. Two or three pages are devoted to gardening and cultivation. In 1854 an attempt was made to establish a garden at Hiswah, but it proved a failure. A further trial was made in 1863, and continued to 1866 without any satisfactory result. All that remains now of the abandoned garden is a grove of Date Palms and a few Doum Palms. Attempts to naturalise Casuarina equisetifolia were equally unsuccessful. The only thing at all answering at present to a garden in Aden proper (that is, the peninsula) is at the tanks. A number of foreign and native trees and shrubs have been planted in that place and gardens laid out, making the only evergreen spot in the settlement. Amongst the more conspicuous subjects are: Thespesia populnea, Parkinsonia aculeata, Adenium obesum, Capparis galeata, Poinciana elata and several species of Acacia. At some of the leading houses very small gardens are maintained by constant watering. Descriptions of all the plants are to follow in a second part. The Oliver whom the author has not succeeded in tracing is probably Captain S. Pasfield Oliver, who spent some years in Madagascar.

---

[*] *Die Orchideen.* Published by Paul Parey, Hedemannstrasse, Berlin. Price M. 2.50 each part.

[*] "Flora of Aden." By Ethelbert Blatter, *Records of the Botanical Survey of India*, Vol. VII., pp. 1-79, with an orographical map and five full-page views. (Calcutta: Government Press, 1914.) To be followed by a second part containing descriptions of the plants.

The Week's Work.

THE ORCHID HOUSES.

By H. J. CHAPMAN, Gardener to Mrs. COOKSON, Oakwood, Wylam-on-Tyne.

Cool-house Oncidiums.—Oncidium crispum, O. Forbesii, the natural hybrid O. Mantinii, and others of this section, are starting into growth, and may be repotted as soon as fresh roots form. Although classed as cool-house plants, they do best in a position where they receive more light than that usually afforded to Odontoglossums, and a cool, intermediate temperature is more desirable than the damp conditions of the Odontoglossum house. Shade the plants sufficiently to prevent the sun's rays from scorching the foliage. They should be grown in shallow pots or baskets, the compost to consist of about equal parts fibrous peat, chopped Sphagnum-moss, and broken Oak leaves. Press the compost firmly about the roots and the base of the plants. With plenty of sunlight moisture evaporates rapidly, and, as the plants require liberal supplies of root moisture during the time when they are growing and flowering, watering must be done with extra care. Spray the plants overhead when the conditions are favourable. O. concolor is exceedingly useful in the early spring. Attend to necessary repotting at the present before growth becomes far advanced. O. tigrinum should be repotted when the new pseudo-bulbs commence to form, for then fresh roots develop and the plants quickly become re-established. The soil advised for the other species is suitable, but charcoal and sand should be added; and use well-drained pots.

Miltonia vexillaria.—The growth of plants which flowered early in the season is well advanced, and the annual repotting may be undertaken. I have already referred in a previous calendar to the different methods of treatment and times for repotting this Orchid under varying conditions. M. vexillaria should be potted loosely, and ample chopped Sphagnum-moss, as well as a fair quantity of broken leaves and sand or broken crocks, should be included in the compost. Let the plants remain in the Odontoglossum house until the end of September, and shade them carefully after they are repotted. Examine the growth for the presence of yellow thrips, and if the pest is observed, dip them in an insecticide whenever the outside conditions are favourable. Spray regularly with a mild insecticide.

THE FLOWER GARDEN.

By W. CRUMP, Gardener to Earl BEAUCHAMP, K.C.M.G., Madresfield Court, Worcestershire.

Alterations to Beds.—During the summer notes should be made and plans sketched in preparation for next season, when the beds have to be re-designed. It is advisable to discard older varieties and replace them with more up-to-date sorts, or a different class of plants altogether. This is an important point in the management of the flower garden, for it helps to maintain the interest and the pleasure of those most nearly concerned.

Pentstemons are proving some of the most satisfactory of bedding plants this season. Each year they are grown in increasing numbers, and, given good cultivation, very few plants provide more gorgeous and effective colouring displays when massed. There are many good varieties possessing healthy vigorous foliage and long spikes of large flowers, ranging from white to purple. The scarlet and pink varieties are excellent; George Home may be recommended for planting in masses to provide blocks of rich scarlet colour over a long period. Newbury Gem and Southgate Gem are excellent for edging. Remove all seed pods from the plants, for if these remain the flowers will be small in size. Pentstemons are gross feeders, and the roots should receive assistance occasionally, in the form either of artificial fertiliser or of liquid manure.

Kniphofia and Galtonia.—These effective plants are now extremely gay, and if planted in juxtaposition, in large recesses, on mounds, or in specially reserved and prepared sites in shrubberies, brighten up the whole landscape, but they require to be planted on a bold scale.

Coloured Shrubs.—Good effects are also obtained by the planting of bold groups of coloured foliage shrubs, such as Golden Elder and Prunus Pissartii. The shoots should be cut hard down to the ground every year. These ornamental shrubs should be planted from four to six feet apart, and the ground about them kept clean of weeds.

Gladiolus.—The various kinds of Gladioli are useful plants for bedding purposes. A large bed of irregular shape, sloping down to the edge of a pond, planted with Hydrangea paniculata grandiflora, interspersed with plants of Gladiolus Brenchleyensis, gives an effect beautiful in the extreme, especially as the colours of the flowers are reflected in the water. G. Brenchleyensis, although an old variety, is very effective, and the bulbs are cheap. The choicer and larger varieties should be reserved for more generous and special treatment in the bulb garden proper. A few good varieties are Faust, Hollandia, and Prinseps. The variety Baron Hulot, associated with Watsonia Ardernei, makes a charming display.

PLANTS UNDER GLASS.

By C. H. COOK, Gardener to the Earl of DERBY, Knowsley Hall, Lancashire.

Forcing Bulbs.—It is time to make preparations for the forcing of bulbs for winter blooming. If Freesias and Roman Hyacinths are required in bloom from November onwards the bulbs should be potted at once. Ordinary potting soil is suitable, and should be free from artificial manure. Pot the Freesias in 5-inch pots, placing six to eight corms in each receptacle. Work the soil firmly around the corms, place the pots in a cool frame. Water the soil, and cover it with a layer of Moss, mats or other material until roots form and a little top growth is visible. They may then be placed on an airy shelf in a greenhouse, or remain in the frames, admitting an abundance of air during favourable weather. Old tubers should be sorted and the best potted up for flowering. It is a good plan before potting them to spread them in the sunshine, for this will prevent their rotting and the growths will be stronger.

Roman Hyacinths.—Place as many bulbs as possible in each 5½-inch or 6-inch pot, and sprinkle sand around them. Pot firmly, with the apex of the bulbs just above the surface. If the soil is dry, soak it with water. Plunge the pots in a bed of suitable material and cover them with 4 inches of ashes that have been exposed to the weather for some time. The object of plunging the bulbs is to get plenty of roots to form before forcing is attempted. When the pots are filled with roots and the top growth about 1 inch long the plants may be removed to a cold frame. Cover the frame with mats for a week or two, then gradually admit light and air. These Hyacinths may be planted in boxes and grown under the same treatment as afforded those in pots. Grown in this way they will furnish a supply of cut blooms, or the plants may be lifted when coming into flower and planted in baskets, vases, etc.

Tulips and Narcissi.—These bulbs require the same treatment as advised for Roman Hyacinths. Pots 7 inches in diameter are suitable. Deep boxes may be used for Tulips, but Narcissi do not lift well from boxes and should be planted direct into whatever receptacles they are required to flower in. To be successful with the forcing of bulbs, the important points to observe are early potting and allowing the bulbs to remain in a bed of ashes in a dark frame until the pots are filled with roots. If these details are observed, the forcing and production of good, early flowers will be assured.

Codiaeum and Dracaena.—For so long as these plants continue in active growth the houses should be closed early each evening and well syringed with clear water. If red spider is detected either dip the plants in an insecticide or sponge the leaves; set the plants out thinly so that they may receive plenty of sunlight, which brings out the rich colour.

Ficus elastica variegata.—Young plants raised from "eyes" are growing strongly and may be treated as advised for Codiaeums. When the plants have grown to a suitable height for house decoration give them cooler treatment with a view to checking growth. The plants will retain their leaves for several years under this treatment.

Caladium.—The plants are past their best condition and beginning to look untidy. In removing them to a cooler house take care that they do not experience a check, and fire heat will still be necessary to ripen the foliage gradually. Less water will be needed, and when the foliage has quite died down the plants may be stored under a stage where the temperature does not fall below 63°.

FRUITS UNDER GLASS.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

The Vinery.—Houses in which the bunches are ripe or ripening need to be ventilated very carefully; whenever the weather is favourable admit an abundance of fresh air, which will not only conduce to the good of the present crop, but help to ripen the wood for next season's fruiting. Fire-heat must be freely used during cold nights, and also during the day time, when the weather is dull or damp, admitting sufficient air to maintain a light, buoyant atmosphere. Hexagon netting should be fitted over the ventilators of houses containing ripe Grapes, to prevent wasps from entering. This is preferable to placing each bunch in a bag of muslin, which frequently spoils the appearance of the berries. Remove lateral growths on vines in successional houses at frequent intervals, and promote a fairly high temperature in vineries containing Muscat Grapes not quite ripe. The foliage of Grapes, and Muscat varieties in particular, is liable to attacks of red spider during the time when the fruit is ripening, and measures must be taken to destroy the pest directly it is detected.

Melons.—Expose fruits that are ripening to the light and air, and stop all lateral growths closely. Plants setting their fruits should be grown in a temperature not lower than 75° to 85°, and if there is a danger of the temperature dropping below this during dull or damp days the hot-water system should be employed. From now onwards Melon-growing will be much more difficult than in early spring, and the plants will need all the available sunshine during the remaining weeks of summer. The last batch of plants should already have been planted, or there is little hope of ripening the crop satisfactorily. Maintain an equable temperature, by occasionally renewing the linings of the hotbed, where the plants are growing in frames, and discontinue syringing during dull weather. Water the roots with great care when the weather is damp, and raise the fruit well above the foliage, so that it may receive the full benefit of air and sunlight. Fruits nearing the ripening stage should be cut a day or two before they are quite ripe, and be placed in a dry, airy room.

Cucumbers at this time of the year are subject to attacks of thrips, a pest not easily discernible unless the leaves are closely examined Upon the first appearance of thrips remove all leaves that show signs of infestation. and well fumigate the house. Afterwards syringe the plants with fairly strong tobacco water. Watch the progress of the roots, and see if the plants require a fresh top-dressing of turfy loam and decayed manure. Do not allow the growths to become overcrowded; remove all old leaves as soon as they are over, and train in the younger growths to take their places. This simple detail of removing the old leaves might, and does, save much trouble, for it will be frequently found that almost all the insect pests are present on these old leaves. Should mildew make its appearance—and plants growing in frames seem to be peculiarly susceptible to this pest during August and September—dust the foliage and sides of the frame with dry flowers of sulphur. Make speedy preparations, if not already done, for the raising of plants for the winter crop, and see that the house or pit is thoroughly cleansed in preparation for planting. It is useless to attempt to grow Cucumbers during the winter months, unless a full and ready supply of artificial heat is at command, an important item overlooked by some growers. A partially sunk lean-to house or pit with a full south aspect conserves the heat better than a span-roofed structure.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Pears.—As a result of early thinning the fruits are swelling rapidly, and the growth and foliage is clean and healthy. Attend to the work of summer pruning at once. Pinch out all lateral growths on cordon trees, and expose the fruits as much as possible to the sunshine that they may develop a good flavour and rich colour. Shorten grossly growing shoots, to preserve a proper balance of growth. The earlier varieties, such as Jargonelle, Williams' Bon Chrêtien, and Citron des Carmes, will soon be ripening, and fruits should be gathered just before they are fully ripe. To ensure a succession of ripe fruits, gather a few daily, and, if the weather turns dull and cold, pick a few of the ripest fruits, and place them in a box in a moderately warm place. Care should be taken not to gather too many fruits at one time, as they ripen and deteriorate quickly after they are picked. Both early Apples and Pears should be eaten as soon as they are ripe. Trees of later varieties bearing full crops should be fed with artificial fertiliser or liquid manure, but the ground should first be well watered. It must be remembered that, although established trees bearing large crops require regular applications of manure, stimulants afforded to young trees will result in an abundance of rank and unfruitful growth. Trees growing in thin, gravelly soil require much more water than those planted in heavy ground. Where fruit is required for exhibition purposes it should be thinned more severely than for ordinary purposes, and each fruit should be fully exposed to the sunlight, for high colour counts on the exhibition table.

Vines in the Open.—Train the growths thinly to the wall, to allow of a free circulation of air amongst the leaves, which will keep them firm and healthy, and less likely to be troubled by mildew and other pests. Pinch out all lateral growths as soon as they develop, and stop the leading shoots when the wall space is filled. Mildew is the chief pest of out-of-door vines, and usually makes its appearance during damp cold weather. At the first appearance of mildew, spray the foliage with a mildew specific. During hot, dry weather, red spider is likely to spread, but this pest may be destroyed by syringing the foliage with clear water daily in the afternoons.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Endive.—Sow Endive now for late cutting and transplant seedlings that are ready at 15 inches apart. A loose and not necessarily very fertile soil suits this vegetable. Hoe the ground about nearly full-grown plants, and those required for early consumption should be lifted at five-day intervals, each with a sufficient ball of soil attached, and placed closely together on the floor of the Mushroom house, or other cool place, from which the light is excluded.

Lettuce.—Lettuce sown at this season cannot be relied upon to mature, therefore it is advisable to sow a few seeds at weekly intervals to ensure a continued succession during the autumn. Last season a more than usually late sowing was the most valuable of all. It is well to transplant the seedlings whilst they are very small, and transplantations should be done almost continuously for some time to come. There are usually two plantings from each sowing, which ensures a succession.

Weeds.—In wet seasons weeds grow very rapidly, but this summer it has not been a difficult matter to keep them under. A simple method of destroying weeds is to skim the alleys between the rows with a spade, throwing the material on the vegetable quarters, and among crops, turning over the surface soil to a depth of two or three inches. This will clean the land and also freshen it considerably. Large weeds should be removed by hand.

Brussels Sprouts.—After the dry period afford Brussels Sprouts a little stimulant, a pinch of sulphate of ammonia being sufficient to start each plant into vigorous growth. This year the only plants that lack vigour are the later raised ones, and, on the whole, it is far better to give the plants a long season of growth rather than to try to hurry them at this stage. January-raised plants prove more satisfactory here than those from sowings of the previous autumn, or those raised in April or May of the same year.

Mushroom beds require attention. Although the nature of the crop depends largely on whether the bed is formed of well-sweetened manure capable of producing heat by fermentation the nature of the soil also determines the quantity to a considerable extent. In a light soil the crop is soon over. If manure is scarce, mix with it lumps of turf. Fresh spawn is essential to rapid production, and portions should be placed well in the bed when the temperature of the bed is suitable; if the manure is excessively moist the pieces of spawn may be laid on the surface and slightly pressed down. The soil covering may either be put on immediately after spawning or after an interval of a few days. I find it advisable to cover the beds with a layer of straw, which serves to conserve the heat and moisture. Some growers use moist mats, and it is advisable to use as little fire heat as possible.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Crops in the Open.—During this changeable weather vegetation grows very luxuriantly, and the grower has ample scope for his abilities. The marketing of Cauliflowers, Beans, and Marrows is the most important operation, and these crops are likely to command a fair price during August. Lettuces have again proved a remunerative crop, and must be considered as an important item in the programme of crops for next season. As soon as ground is available set in beds the Batavian and curled Endives, ten inches apart each way. Select a piece of ground that has been manured for a previous crop, and promote a quicker growth during August by watering the plants whenever moisture is needed. Celery set in old manure beds is making rapid growth, and all crops set between should be kept well watered. Celery is already available on the market, but there is little demand for this vegetable until early in September, when it remains firm and tender over a longer period. Carrots are growing well, and the main requirement of this crop, besides watering, is frequent thinning, so as to obtain strong and sturdy plants by October. Afford Witloof Chicory ample space for the development of the crowns; an occasional dressing with nitrate of soda will be beneficial to the swelling of the main roots. Secure the stems of Tomato plants to their supports, now that the fruit is swelling. Thin out the leaves gradually, but do not check growth by removing too much foliage at one time, or the skin of the fruits will become hard and crack at the ripening period. All the seedling Cabbages are now pricked out; ample allowance must be made to have plenty of good plants ready for setting out later.

Melons.—The fruits are ripening fast, and should be marketed directly they are ripe. Attend carefully to watering, especially the latest plants, which are now at their best. Remove the lights when the weather is fine, but have them ready at hand in case they are wanted.

Cucumbers.—These plants are now in full bearing, and should be examined twice weekly with a view to cutting all fruits that are ready. Prune the shoots regularly to increase the yield. Ventilate the house during the day, and at night when the weather is suitable; this will help in preventing disease, including the "damping off" of the fruits.

Nursery Beds.—Sow very thinly the winter crop of Lettuce in a well-prepared bed, top-dressed with a good layer of fine, black soil. The variety Little Gott forms good heads, and White Passion is another favourite on account of its hardiness and sturdy growth. Lettuce is a valuable crop, because of its certainty and the little attention required. The plants do best in frames, but they can also be grown in a cold house, provided it receives plenty of light.

THE APIARY.

By Chloris.

Work for the Season.—The main part of the honey has now been harvested, and in many places the season has been a good one. Where the honey flow has not ceased care should be taken not to pile on more racks than the bees can be reasonably expected to fill and seal, or there will be a large quantity of unsealed and unripe honey to extract. The supers of shallow frames should be extracted without delay, for the honey thickens when it cools, and the extractor fails to dislodge all the honey from the combs, thus causing loss to the beekeeper. The difficulty may be overcome by placing the racks in a room with a high temperature (not sufficiently high to melt the wax) for 48 to 72 hours. If the honey cannot be extracted at once the frames should be stored in a warm, dry room. To prevent fighting and robbing among bees, caused by the smell of honey, and to minimise the sticky mess caused by the most careful work during extraction, it is well to do all the work in one evening. The room for the purpose should be bee proof and warm, so that the honey will remain a thin liquid to facilitate straining and bottling. Should there be any unsealed honey to extract do that separately or it will cause the ripe honey to ferment, and the unripe honey should be covered with muslin and allowed to stand in the ripener in a warm place to permit the moisture, which it contains in excess, to evaporate. Better prices will be secured if the honey of different grades be not mixed, but kept separate. The grades usually adopted are three:—light, medium, and dark. Indiscriminate mixing invariably leads to a lowering of the price. I fear, too, many beekeepers forget their own families in their eagerness to sell. In any case there ought to be a liberal amount left for home consumption, especially when low prices rule. When used in cake-making in place of sugar, besides being beneficial as a food and medicine, it will be found that the cakes remain moist longer than those made in the usual way. Further, it may take the place of sugar in all beverages, and when once the taste has been acquired the family will not care to take to sugar again. In many districts driven bees will be obtainable, and where they are free of disease they may be usefully utilised in strengthening weak colonies. If this is not necessary, two or three stocks can be mixed together and shaken out to form a new colony. As the bees may not be ready for driving until the end of the month, colonies may be encouraged to draw out combs in readiness for the driven bees, so that they can begin storing syrup at once. The syrup for this purpose should be white lump cane sugar, 10 lbs. to 5 pints of water. Always give the syrup in the evening, and put it on luke warm. Wrap up warmly, take care to spill none, or robbing will probably result, and close the entrances so that one bee only can pass at a time. Feed rapidly, so that the bees may store and seal 30 lbs. (this quantity is safer than 20 lbs., commonly recommended). To provide the queen with plenty of cell space it may be advisable in many parts of the country to extract from one or two frames, because bees often choke up the brood chamber in late districts, and too few young bees are raised in the early autumn and the stocks will come out weak next spring. If it be impossible to secure driven bees to strengthen weak colonies, then these should be united, allowing two or three to make one strong stock.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, AUGUST 17—
Pitsmoor Fl. Sh.
Sweet Pea Sh. at Sheffield.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 61.7.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, August 12: Max. 75°; Min. 55°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, August 13 (10 a.m.); Bar. 30.26; Temp. 77°. Weather—Bright Sunshine.
PROVINCES, *Wednesday*, August 12: Max. 81°, Brighton; Min., 45°, Harrogate.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY AND THURSDAY—
Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 1 p.m.

WEDNESDAY—
Bulbs in large quantities, for the Trade, by Protheroe and Morris, at 3 p.m.

The Work of those who Stay at Home.

The first need of the country is the enrolment of the Army for which the Minister of War has appealed. That is the first need, and it is the first duty of every citizen to help to satisfy that need. Next in order of importance is the necessity that the work of the country should be carried on, for thereby distress may be prevented and confidence engendered. A Central Advisory Committee for the relief of distress has been formed, and is presided over by Mr Pease, Minister of Education. Communications to the Committee should be addressed to the Secretary of the Committee at the Local Government Board. The Central Committee is creating local committees to aid in carrying out schemes of work, and much real help can be given if those too old or otherwise unfit for active service will put themselves at the disposal of their local committee, volunteering to carry out with disciplined zeal the orders they receive from their committee. Much may be done to reduce distress by the prompt adoption and carrying out of schemes calculated to provide work and to result in improvement in the country-side, in towns, allotments, or in private establishments. Real help may be given by those whose financial position allows it by not reducing but increasing the amount of direct employment on their estates and gardens. They can secure the skilled labour of married men to work upon their estates, to trench their land, to clear their ditches, to trim their hedges, prune and lop their trees, and mend and make the roads and paths. Those who have money can make inquiry among the allotment holders and cottagers in country districts, and can learn how much economy in planted crops can be effected at no great cost by providing wire netting to prevent the depredations of rabbits. Only those ignorant of the damage done by this vermin will think this a small thing: it is one of the things which makes for increased work and increased food, and should be put in hand.

Another plague from which allotments (and farms) in many parts of the country suffer is that of rats, and the Board of Agriculture would do well to issue without delay a pamphlet giving simple instructions as to how these pests may be dealt with. Golf clubs may help by taking this opportunity of attending to and re-sowing worn greens, eradicating Clover and weeds, and laying down turf nurseries. The authorities of the public parks can help by renovating the playing grounds, repairing their paths, and trenching their grounds. The highway authorities can secure employment by attending to the highways, their hedges, ditches, and trees. Whilst refusing to destroy the beauty of English highways, they can set to work to remove obstructions at turnings, cross-roads, etc., which are dangerous to the traffic of the road. The River Conservators may find employment for men in the preservation and renovation of river banks, and the owners of riverside land may improve their land by the cutting and grubbing out sedges and restoring it to full use again. All who have land under cultivation may do a part in providing more food by co-operating with the R.H.S. in carrying out its scheme for the planting of that land. Those who wish to help in this scheme, outlined in these pages last week, should communicate with the Secretary of the "Care of the Food" Committee, Royal Horticultural Society, Vincent Square, S.W.

This is the time when patriotic municipalities can, if labour be available, and available it will be, add to the amenities of their several districts, by taking over land and laying it out as parks and recreation grounds. In not a few cases land owners will be willing to give the land and in some cases municipalities possess it already. Larger schemes are being planned, such as the ploughing up of poor pasture, and the cultivation of waste land. The immediate need is to prevent distress rather than to allay it, and the smaller schemes which we have enumerated and others of like nature which will occur to thinking men will aid in bringing about this end.

If the work of the Central Committee is to be effective, local committees must act with promptitude and discernment. This they can do in the country districts by personal and house-to-house inquiry, and by a systematic grouping of the districts, as has been done at Harrow (see p. 134). The work of the R.H.S. in securing the planting of land with crops will be greatly facilitated if growers, market gardeners, and others will communicate with the R.H.S. committee, stating what reserves of Cabbage, Savoy, and similar plants they can provide for those who have land but none of these plants.

Private gardeners will suffer from unemployment. The schemes that we have outlined should provide work for a certain number of them. Local Gardeners' Associations should get into communication with the R.H.S. committee and with the local committees to co-operate with them and provide men who can direct the operations involved in the measures of planting, sowing, trenching, etc., which we have recommended.

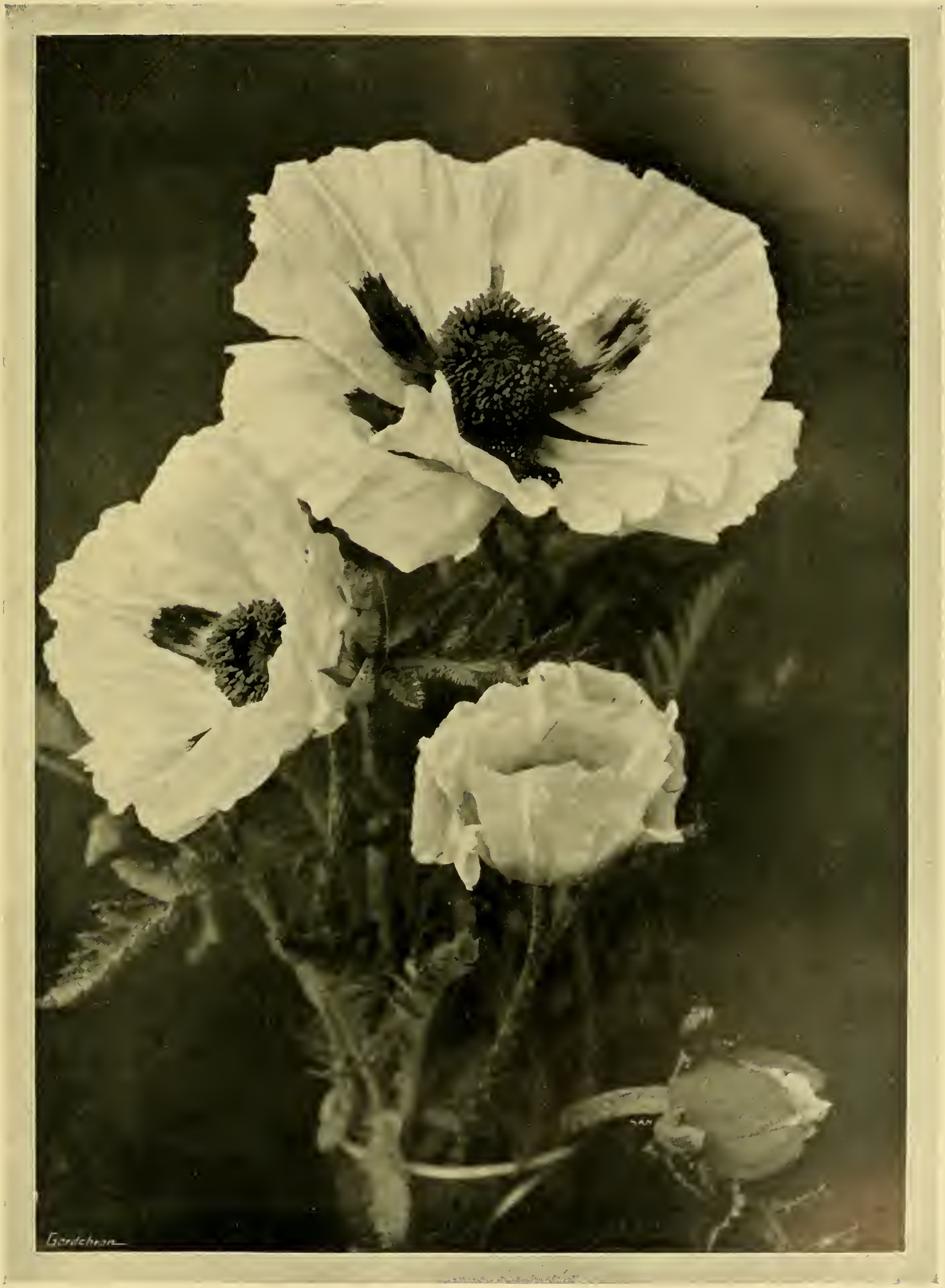
It should be remembered that of the larger food staples, sugar will be scarce, therefore it is all the more important that the utmost care should be taken in preserving fruit by storing, bottling, and other suitable means.

Those who undertake the trenching of ground should remember that a light dusting of basic slag in the trenches will add materially to the fertility of the land. Large growers as well as small growers should remember that trenched land bears bigger crops, and they should further remember that if the digging in of manure can accompany the trenching, the fertility is further increased.

If every man who owns a garden and who has the means will inspect that garden and think out carefully what can be done to increase its usefulness and its amenity, he can discover a great reserve of work which may provide employment for men who are well able to do that work. We appeal urgently to all to work through and with their local committees. Thus may distress in some measure be forestalled, and when the star of peace shall rise again, it shall shine on a fairer and yet more fertile country.

Supplementary Illustration.—The Oriental Poppy is one of the most gorgeous of all hardy border flowers, and has long been a favourite in gardens. It was introduced into this country from Armenia as far back as 1714. The flowers are not only imposing in size, but their rich scarlet colour makes them the most conspicuous and brightest feature in the whole flower border. It was not until the year 1888 that raisers introduced novelties of different shades from the original scarlet colour. The first break of importance was Blush Queen, which received the first-class certificate of the Royal Horticultural Society in 1888. The flowers of this variety are of medium size and of a delicate blush tint. The raiser was the late Mr. SONNTAG, of Messrs.

Supplement to the "Gardeners' Chronicle."



Papaver orientale "Perry's White."

Printed by Love & Malcomson, Ltd., London, W.C.

Ware's nursery, and he also gave us Brilliant, vivid vermilion; Little Prince, brilliant orange; Royal Scarlet, large rich scarlet flowers; Scarlet Queen, a pleasing shade of salmon-scarlet; and, finally, Silver Queen, the nearest approach then to a white variety. The work was continued by others, including Mr. Godfrey, of Exmouth, and the late Mr. Amos Perry, of Enfield. Mr. Godfrey has been successful in raising varieties of maroon, satiny puce, and lilac shades, whilst Mr. Perry has given us such fine varieties as Princess Ena, a delightful shade of orange-salmon; Queen Alexandra, bright rosy-salmon; Mrs. Marsh, rich crimson-scarlet, heavily blotched with white in each petal; and Mrs. Perry, with well-formed flowers borne on erect, stout stems, 3 feet high, and of a delightful shade of salmon-pink. But none of these raisers was successful in obtaining a white variety, and it is remarkable that the first white Oriental Poppy was discovered in a small London back garden. It came into the possession of Mr. Perry, who named it Perry's White (see Supplementary Illustration). Mr. Perry informs us that seed from this white Poppy has produced seedlings showing almost all colours, some with fringed petals and others flushed with a picotee edge. The Oriental Poppy is not very particular as to soil, but, like most subjects, it repays for good cultivation and grows best in ground that has been deeply trenched and well manured. The flowering period is a long one, for the earliest blossoms open in May, and late flowers may often be had in August, and sometimes in September.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Hippeastrum Daphne.

R.H.S. Fortnightly Show Abandoned.—The usual fortnightly show was not held on Tuesday last, as the Horticultural Hall has been requisitioned for military purposes. We learn that the 2nd division of the Westminster Dragoons (Yeomanry) is stationed there, and the playing fields of the Westminster School opposite are being used for the accommodation of horses and stores. The Council met as usual. The Lindley Library is still open, and the work of the office staff is proceeding as usual.

The Royal Horticultural Society's Gardens, Wisley.—At the meeting of the Council held on Tuesday, August 11, plans for the carrying out of work and improvements at Wisley were considered and adopted in principle. The Director received permission to give employment to several married men (farm labourers and gardeners) who live in the neighbourhood and have lost their employment. A scheme for giving similar local help on a larger scale will be considered at the next meeting of the Council. It is not possible, however, to find accommodation or work for those not living in the neighbourhood of Wisley.

The Food Supplies.—The Board of Agriculture and Fisheries has obtained complete information of the stocks of Wheat and flour held by about 160 of the principal millers in Great Britain. On the basis of the figures now available there is in the United Kingdom at the present time, including the home crop now being harvested, five months' supply of bread stuffs. This is additional to the Wheat and flour on passage and due to arrive shortly.

—— The Board of Agriculture and Fisheries has made special inquiries by its own officers into the supply of meat now in cold storage in the principal centres in England and Wales. As regards chilled and frozen meat, the existing stocks are sufficient to meet the ordinary needs at the normal rate of consumption for about six weeks, while there are three to four weeks' supply on passage and due to arrive shortly. As regards home supplies, which represent 60 per cent. of the total consumption, the Board has ascertained from the recently collected agricultural returns that there is a substantial increase in the numbers of live stock as compared with last year.

—— In view of the special importance at the present time of securing that the home-grown supplies of food-stuffs are used to the best advantage in the public interest, with due regard to future requirements, the President of the Board of Agriculture and Fisheries has appointed the following gentlemen to serve as a consultative committee:—The Right Hon. Sir Ailwyn Fellowes (chairman), Messrs. Charles Bathurst, M.P., Charles Bidwell, H. Trustram Eve, S. W. Farmer, C. B. Fisher, E. M. Nunneley, Francis H. Padwick, George Scoby, G. C. Smyth-Richards, R. Stratton, the Hon. Edward G. Strutt, and Mr. Christopher Turner. Mr. A. Goddard, secretary of the Surveyors' Institution, and Mr. C. B. Marshall, secretary of the Land Agents' Society, have consented to act as secretaries. The first meeting of the committee was held on the 10th inst. at the offices of the Surveyors' Institution, 12, Great George Street, Westminster, to which address any communications may be sent to the joint secretaries.

Provision of Food.—The Development Commissioners are advising that all landowners in England and Wales should send to the Agricultural College for their province particulars of any waste land they may possess and which they will place at the disposal of the authorities. Land so offered will be made use of to the best advantage, and if necessary will be improved by reclamation or afforestation.

Nursery Employees and the War.—On Wednesday, the 5th inst., the principals of Messrs. Sutton and Sons, of Reading, bade farewell to the reservists and Territorials among their staff, and afterwards met the whole of their employees, when it was announced by the senior partner that the welfare of the wives and families of those called on to serve their country would, during their absence, be cared for by Messrs. Sutton and Sons, and the places of all thus serving their country would be open for them on their return.

Gardeners as Soldiers.—We learn from Mr. Jas. Gibson, gardener at the Duke of Portland's residence, Welbeck Abbey, that 17 of the gardeners have responded to their country's call for men and joined the colours. This affords a remarkable instance of unanimity, as the number includes nearly all the men in the garden staff who are eligible.

Gardeners in Action.—At the village of Soiron, near Pepinster, on the frontier between Belgium and Luxemburg, three Belgian gardeners fired upon a detachment of 200 German soldiers, who were posted at a farm. The soldiers set upon the gardeners, shot them down, and proceeded to put the whole village to the sword.

Rural Labour.—In many parts of the country the rush to the colours has caused a shortage of agricultural labour. In many cases women are getting in the harvest as best they can. Horses also are getting scarce, many of them having been commandeered for military purposes. It is proposed to establish at Birmingham a register of horses in order to classify the supply and demand.

Price of Jam-making.—Owing to the sudden rise in the price of sugar, the preserving of fruit will be a more expensive matter this year than usual. Sugar which cost 15s. a cwt. before the war now sells at 38s. When the market becomes easier the price may fall to about 30s. The crops of fruit are plentiful, especially Plums and Apples, so that jam, though dearer than usual, is likely to be made in considerable quantities.

Crystal Palace as Hospital.—The Crystal Palace, which has just been purchased for the use of the nation, has been offered to the War Office by the trustees as an emergency hospital for wounded soldiers. It is peculiarly well suited in many ways for such a purpose, and has the great advantage of extensive grounds, situated at a considerable height, in which convalescent patients could sit and take the air. Many owners of large country residences have offered their houses for the same purpose. The Grand Duke Michael has placed Caen Wood Towers at the disposal of the authorities; if necessary the Duke of Portland will lend Welbeck Abbey, and the Duke of Westminster has offered both Eaton Hall and Grosvenor House.

Bomb in a Garden.—A man employed in the Mile End Waste Garden, Stepney, on Monday last picked up a brass cylinder which was lying under a bush. The cylinder contained nitro-glycerine and immediately exploded, injuring his hand. Four other cylinders were found near, and it was thought that they had been thrown away by a foreigner who feared his house might be searched.

Rabbits for the Poor.—A correspondent in the *Times* suggests that free permission should be given to all to shoot (not trap) wild rabbits for food. This would also have the advantage of protecting the future supplies of fruit and vegetables from the depredations of these animals.

Science Students as Soldiers.—The Royal College of Science, Dublin, is given over to the purposes of military training. Classes are being held in military engineering and many applications to join are received daily.

Harvest of Wild Fruit.—A correspondent in the *Daily Chronicle* draws attention to the value of the Blackberry crop, adding that this year, at least, the bushes should not be trimmed until they have yielded their fruits.

Provincial Flower Shows Abandoned.—Owing to the national crisis the directors of the Shropshire Horticultural Society have decided to cancel the Shrewsbury Horticultural Show, which was to have been held on the 19th and 20th inst. The Aberdeen Horticultural Show and the Sandy Flower Show have also been abandoned, and we learn that similar action is contemplated by other horticultural societies throughout Scotland.

Vegetation of Australia.—In connection with the visit to Australia this year of the British Association for the Advancement of Science, the Commonwealth has issued a *Federal Handbook to Australia*, to which Mr. J. H. Maiden has contributed an article bearing the above title. A reprint of this article has already reached this country, and it may be recommended to all those interested in the subject. The author discourses of the vegetation both from a scientific and practical standpoint, beginning with physical and botanical statistics, and following with sections, among others, on "Some Problems of the Pastoral Industry," "Weed Legislation," "Destruction of Forests," "Scrub and Brush," "Natural Hybrids," "Use of the Term 'Desert' in Australia," "Origin of the Australian Flora," and "Affinities of the Australian Flora." With his usual industry, the author has crowded an immense amount of information into fewer than fifty pages. The late Sir Ferdinand von Muller estimated in 1889 the vascular plants of Australia at 8,909 species, belonging to 1,394 genera and 149 families. Maiden himself records 1,856 species as having been added since 1889, making a total of 10,673 species. Many genera are represented by a very large number of species. For example, Acacia, 412; Eucalyptus, 230; Grevillea, 193; Melaleuca, 112; Stylidium, 112; Goodenia, 112; Hakea, 107; Hibbertia, 104; Pultenaea, 93; Eremophila, 91; Pimelea, 76; Drosera, 62; Dadonaea, 51; Prostanthera, 50; Banksia, 48;

Dendrobium, 45; Bossiaea, 41; and Lasiopetalum, 35. These numbers are not obtained, it may be mentioned, by a highly critical segregation of forms as species.

Labour Exchanges and Harvest.—The Board of Trade Central Office for Labour Exchanges is making special arrangements for the supply of the farm hands, etc., required in connection with the harvesting season. All farmers and other employers who are desirous of engaging this class of labour should communicate their wants to the manager of the nearest Labour Exchange, the address of which can be obtained from the local post office. No fees are charged either to employers or employees.

Sweet Pea "Simplicitas" Trophy.—Owing to the Perthshire Sweet Pea and Rose Society's Show at Perth having been abandoned, the Boundary Chemical Co., Ltd., Liverpool, has decided that the "Simplicitas" International Sweet Pea Championship trophy shall be competed for at Perth Show, 1915. The firm has forwarded a Gold Medal to Mr. Tom Jones, Ruabon, who won the trophy for Wales at the Carlisle Show, 1913.

Prospects for the Harvest.—Reports received from the crop reporters of the Board of Agriculture and Fisheries throughout the country show that the Wheat crop is forward, and that the yield per acre will be well over the average. The harvest has commenced in the southern counties. Barley has improved during the past month, and this crop will probably be up to the average. Oats are yielding a fair crop though short in straw. Beans are average, but Peas are not quite so good. The Potato crop is very strong and healthy, and there will be a full supply, without any addition from imports, for a whole year's consumption.

Flowers in Season.—From Messrs. Kelway and Son we have received a box of choice Gladioli, with spikes of large, beautifully coloured flowers. They were all named varieties representing a few of the firm's finest novelties.

Nursery Employees' Outing.—The employees of Mr. Perry's Hardy Plant Farm, Enfield, had their annual outing on the 25th inst., the day being spent at Southend. The party, numbering 40, were entertained to breakfast at the residence of Mr. Amos Perry before leaving for Southend, where a pleasant time was spent.

Golf Clubs.—Golf clubs may assist in finding employment for married gardeners by taking in hand on a larger scale than usual the renovation and restoring of golf greens, the extirpation of Clover and of weeds and the establishment of turf nurseries.

Messrs. Vilmorin.—This great firm of French seedsmen write to us that of its staff of 700, 400 have been called to the front. The firm hopes that in the course of a month or two it may be able to resume its business with this country.

Seedsmen.—Seedsmen are doubtless taking all the measures possible to prevent a shortage of seed of food and other crops. The Erfurt district is not likely to provide its usual quota, and this fact, which is recognised by seedsmen, should be borne in mind also by those in charge of gardens.

To Agricultural Colleges.—Agricultural colleges can help to reduce unemployment by preparing a section of their land for intensive cultivation. We have information that many gardeners are losing their employment owing to the financial straits of employers. Such men, obtained locally, could be employed for the purpose we have indicated, and the employment would result in profit to the colleges.

To Potato Growers.—Those who grow Potatos on a large scale on farmers' lines will be doing a patriotic and profitable work if they will undertake the trenching and manuring of a section of their land for the growing of Potatos—particularly for seed—on the lines of "intensive cultivation." The yield will be greater and employment will be found for a number of men—farm labourers and others—who are likely to be thrown out of employment after the harvest is gathered.

Preserving Fruit.—Will any gardener who knows of *simple* and effective means of preserving fruits without sugar communicate at once with the Editors? As mentioned in our leading article, sugar is scarce and likely to get scarcer, and it is of great importance that simple preserving methods should be widely known.

Harrow Enterprise.—A conference of leading people at Harrow-on-the-Hill was held at the public hall immediately after the outbreak of war, and it was agreed to call a mass meeting, which was held in Harrow Speech Room. A programme was drawn up by Mr. Charles Sale. With the co-operation of Mr. Stuart and others, it was put before the meeting and adopted. This programme involved a call for volunteers to carry out the work of the committee, which is now under the general direction of the Urban District Council. The whole parish is divided into sections; each section is put in charge of a volunteer member. Groups of 10 sections are in charge of a "captain," and 10 groups of 10 are in charge of a superintendent. Objects—to get into touch with all who can help in the following :—(1) To prevent waste of food; (2) to provide food for all in case of want; (3) to make provision for nursing; (4) to see to the care of allotment gardens of those on active service; (5) to care for families of all engaged in the war. An office has been established at 62, High Street, Harrow, and the several branches of the work outlined above are being followed with splendid ardour.

Presentation to B.G.A. Branch Secretary.—At the Leamington County Flower Show, on July 22, Mr. G. Blackburn, for a considerable period the Secretary of the Leamington Branch of the British Gardeners' Association, was presented by the members of the branch with a silver inkstand and an illuminated address, in recognition of his services to the branch.

The Flower Trade in Paris.—In a recent issue of *Cosmos*, a French scientific weekly, M. Rolet gives some interesting statistics of the development of the flower trade in France. The Riviera trade is said to have begun in 1871. In November of that year the first consignment of southern flowers was put on the Paris market. Last year 229,271 packages, valued at over £80,000, were received during the month of February at the Paris Halles. This total included 32,000 packages of Pinks, sold at 2½d. to 1s. 8d. per dozen; 23,000 baskets of Mimosa, at 2s. 6d. to 8s. per basket; 16,400 packages of Violets, of which 1,000 were Parma Violets, sold at 1s. 3d. to 6s. per package; and the rest Russian Violets, quoted at 6s. 6d. to 25s. per 100 bunches; and 16,800 packages of Roses, worth 5d. to 4s. per dozen. The average daily quantity of flowers sold at the Halles is now estimated at 1,000 to 1,200 baskets; the yearly value of such sales is £1,200,000 sterling, or twice what it was a few years ago. The Halles Centrales are the most important of the ten cut flower markets in Paris, the other large centre, the Marché de la Cité, being principally frequented by nurserymen and vendors of growing flowers in pots. The unit of sale varies with the flower. Roses, Tulips, Camellias, and Carnations are sold by the dozen; Narcissi, Fuchsias, ordinary Violets, by the hundred; Anemones and Mignonette by the bundle ("botte"); Parma Violets by the bunch; Lilac, Guelder Roses, etc., by the "gerbe," or sheaf. No building has so far been provided at the Halles; the flower market is, consequently, held daily on the "carreau," or open square in front of the market; but the covered passage between the fish market and vegetable market is also utilised. The hours of business are thus limited by the rule that the "carreau forain" (hawkers' square) shall be cleared at 8 a.m. in summer and 9 a.m. in winter. The Paris flower shops, numbering some 500, make their purchases at the Halles about 5 or 6 a.m. That is a couple of hours after the opening of the market. Towards the closing hour, flowers that will not keep are sold at very reduced prices, and it is at this moment that the owners of the 600 street flower-barrows of Paris buy their stocks. There is a good deal of ill-feeling on this subject; the shop-keepers complaining that the hawkers spoil their trade, and even purposely plant themselves opposite flower shops; while the growers in the South fear that if the hawkers were suppressed or even handicapped by new regulations large quantities of flowers would be thrown away daily instead of sold, and that the poorer population, who are constant and large buyers of these cheap flowers, would thereby be deprived of a harmless luxury.

Agricultural Returns, 1914.—The Board of Agriculture and Fisheries has expedited the tabulation of the agricultural returns collected in June last, and is now able to give the following figures, subject to final revision, of the acreage of certain crops and the number of live stock in England and Wales this year. The corresponding final figures for last year are added :—

	1914. Acres.	1913. Acres.	Inc. (+) Acres.	Dec. (– Per cent
Wheat ..	1,843,000	1,702,000	+ 141,000	+ 8.3
Barley ..	1,536,000	1,559,000	— 23,000	— 1.5
Oats	1,937,000	1,975,000	— 38,000	— 1.9
Beans ..	299,000	268,000	+ 31,000	+ 11.6
Peas	171,000	164,000	+ 7,000	+ 4.3
Potatos ..	470,000	442,000	+ 28,000	+ 6.3
	Number.	Number.	Number.	
Cattle ..	5,880,000	5,717,000	+ 163,000	+ 2.8
Sheep ..	17,457,000	17, 30,000	+ 327,000	+ 1.9
Pigs	2,516,000	2,102,000	+ 414,000	+ 19.7

On the basis of the above figures and of reports received from their crop reporters, the Board is able to make an estimate of the total production of the following crops :—

	1914. Quarters.	1913. Quarters.	Inc. (+) Quarters.	Dec. (—). Per cent.
Wheat ..	7,320,000	6,642,000	+ 678,000	+ 10
Barley ..	6,140,000	6,323,000	— 183,000	— 3
Oats	9,100,000	9,379,000	— 279,000	— 3
Beans ..	1,080,000	915,000	+ 165,000	+ 18
Peas	435,000	422,000	+ 13,000	+ 3
	Tons.	Tons.	Tons.	
Potatos ..	2,880,000	2,895,000	— 15,000	— ½

The Wheat crop is not only 10 per cent. larger than in 1913, but is well above the average of the last ten years. The crop of Beans is the largest since 1907, while that of Potatos is only slightly below that of last year, which was the largest on record.

RADIUM AND PLANT GROWTH.

In the issue for January 10, 1914, page 24, we referred to Mr. Baker's experiments on the effect of radium emanations on plant growth.

These experiments showed that, like those with electrical discharge, the radium emanations had varied results, and whilst some plants responded rather poorly, others gave an enormous increase. The conclusions which Mr. T. T. Baker drew were that the effects of radium were due entirely to its fertilising and not any sterilising property. Further experiments were made by Mr. Henderson, the surveyor to the Board of Agriculture at Truro, whose successes were more pronounced.

In an endeavour to obtain definite information upon the effects of radium on plant growth, Messrs. Sutton and Sons have carried out a series of interesting experiments in their trial grounds at Reading, and on August 6 we were invited to inspect the 600 pots and boxes containing plants of Rape, Red Clover, Potatos, Peas, Onions, Mangels, various grasses, and such annuals as Acroclinium, Nasturtium, and Salpiglossis. Each test was checked by a control pot, and the effects of radium in varying quantities was compared with the control unit, and with certain fertilisers; the dates of sowing, planting and watering and the number of plants being identical. It is evident that the results from using radio-active ore, which ore is, of course, too expensive for commercial use, differ very little from those of the residue after the valuable radium-bromide has been extracted. This residue can be obtained cheaply, and is estimated to contain about 1.8 millegrammes of radium-bromide per ton, as against about 8 millegrammes per ton in the ore. For the plants in pots Clay's fertiliser and guano were also used. The effects of the use of radium appeared to be greatest in the seedling Rape and Red Clover. In most instances germination was quicker and more even, and more growth was made, but whilst stimulating early growth there is a distinct loss of colour in the foliage, and there is also a probable weakness in constitution, for the plants were not of such a sturdy appearance as those in the "control" boxes, and we suspect that they would not transplant as successfully. This pale colour, indicating want of texture, may often be seen in plants which, from over-stimulation at the root or excessively high temperatures, have grown too quickly. It was seen that as regards the proportions of residual ore used the lowest proportions (1 in 2,240) yielded better results than the highest (1 in 14). In the first series of experiments it appeared that the use of radium resulted in increased roots and foliage, consequently its value was most marked in such crops as Lettuce and Radish, whilst but little difference could be seen in the Tomatos and Peas. This suggests that to obtain full crops some phosphatic manure should be added when fruits are required. The influence of radium on leaf growth was also seen in the luxuriant foliage of Nasturtiums.

Experiments with black oxide of uranium were also inspected. These, Mr. Martin H. F. Sutton, who is controlling the experiments, told the gathering, were inspired by an article on the subject in the *Gardeners' Chronicle*. Such annuals as Mignonette, Dimorphotheca aurantiaca hybrids and Marigold Lemon Queen were treated. The black oxide of uranium was used in the proportion of 1 part to 2,000 parts of soil and, as with the radio-active soil experiments, they were tested with a control and with Clay's fertiliser, and also in combination with Clay's. It was the mixture which showed the best results; the plants were sturdier and flowered earlier.

The value of bacterised peat was also the subject of experiment, and here, as indicated in our previous report (*Gard. Chron.*, p. 12) the best results were apparent in the Tomatos and Nasturtiums, which were growing in pure pit sand and watered with a water extract of bacterised peat.

The trials of bacterised peat were continued on large plots of ground where the crops have received no artificial watering. In the presence of the company the Potato crops from five plots of ground, each measuring 10 square yards, were weighed, and it was found that the yield from plot E, which had received farmyard manure dug in at the rate of about 20 tons per acre, and, after the plants were up, top-dressed with bacterised peat treated with sulphate of ammonia at 8 oz. per square yard, produced the heaviest crop, whilst the difference in weight between the yield of this plot and plot C, on which the sulphate of ammonia was omitted, was only 2¾ lb.; plot B, which received no manure and only a top-dressing of bacterised peat, yielded 6lb. less. The chief conclusion to be drawn from this test was the great value of farmyard manure, which conserves moisture, in a dry season. This was especially noticeable at Reading, where the soil is shallow and naturally well drained. In view of the interest and value of such experiments as these it is to be greatly hoped that Messrs. Sutton and Sons will continue them.

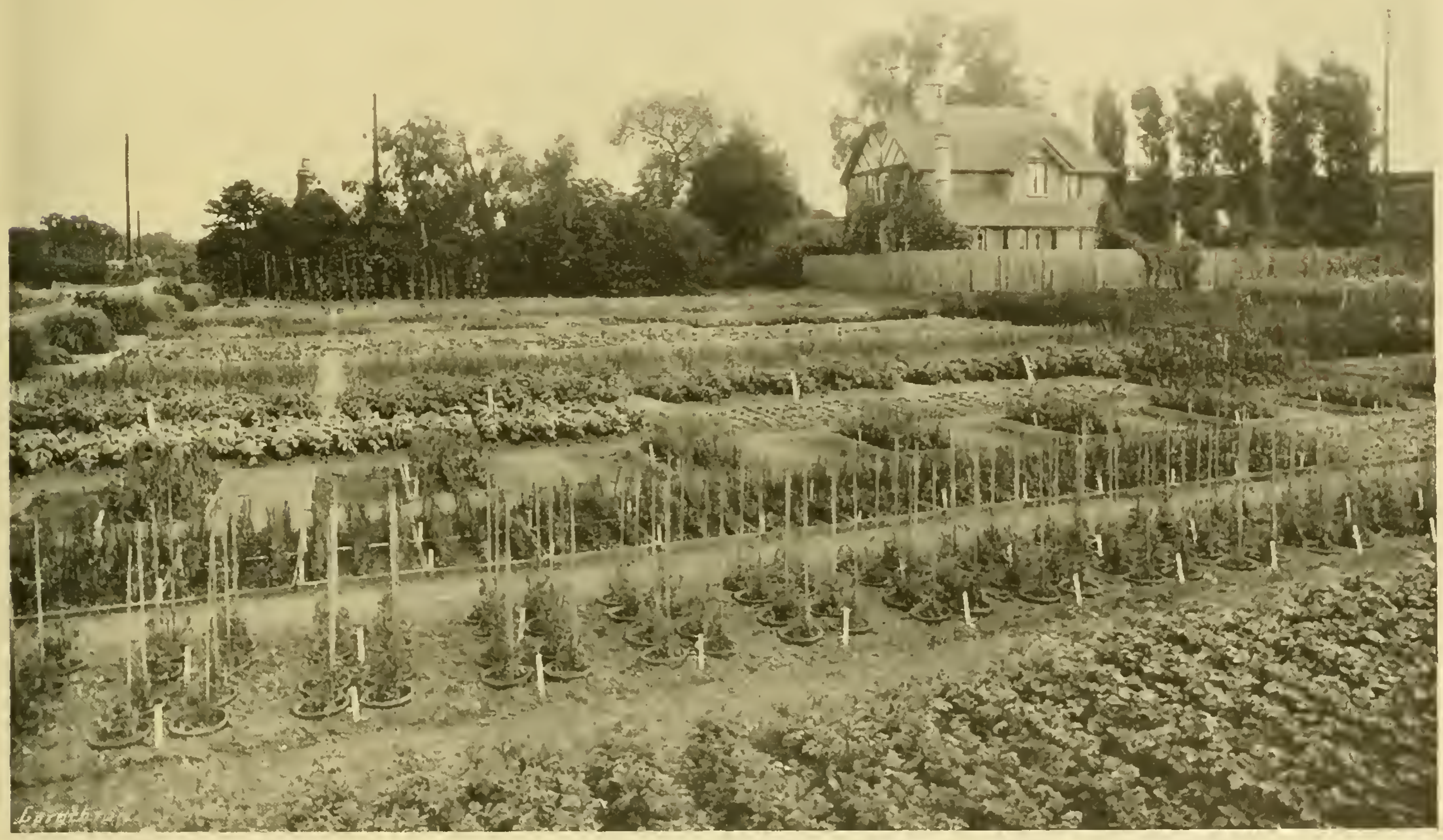


Fig. 55.—Experimental plots in Messrs. Sutton and Sons' nursery, showing plants subjected to radium emanations.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 87-93.)

(*Continued from p.* 111.)

Lincolnshire.—Fruit blossom was never more plentiful nor the prospects for every kind of fruit crop better. Apples are promising. The variety Bramley's Seedling blossomed well, and a fair number of fruits set, but many blooms of earlier kinds withered under the hot sun of early May. Pears have set well on wall trees. Plums of all kinds are scarce, especially on the trees which cropped heavily last year. The crop of Currants of all kinds is good. Strawberries at one stage promised a very prolific crop, but frosts at end of May spoilt all the early blooms of Royal Sovereign and Sir Joseph Paxton. Of the later variety, Givon's Late Prolific has fruited well. Raspberries and Gooseberries are both plentiful. The soil is loam on clay. *F. J. Foster, Grimsthorpe Castle Gardens, Bourne.*

—— There was promise of good crops when the trees were in bloom, but frosts at the end of May, followed by very low temperature on several succeeding nights, ruined the prospects. This year Apples, Pears and Plums dropped freely, though there seemed a prospect of an excellent crop. Strawberries were very disappointing, all the first flowers being killed by frost. Raspberries suffered from the same cause, but Gooseberries and Currants withstood the severe weather. Peaches, Apricots and Cherries are all plentiful, and the trees look healthy. *H. Vinden, Harlaxton Manor Gardens, Grantham.*

—— All kinds of hardy fruits are highly satisfactory. We have more Plums and Cherries than we have had for several years past. Black Currants (Boskoop Giant) are particularly good, the bushes being laden with exceptionally large fruits. Raspberries are plentiful; Strawberries have been a good crop, but the berries were smaller than usual, and the crop was quickly over. Our soil is light and sandy, but very deep, on a bed of white clay. *Fredk. Barton, Hainton Hall Gardens, Lincoln.*

—— Owing to severe frosts in May, Raspberries, Strawberries and Plums suffered severely. Damage was also done to the early Potato crops, reducing the yield to about one-half the normal. Late Potatos are now looking promising. *H. Louth, Boothby Hall Gardens, Grantham.*

Norfolk.—The drought in May and June reduced the quantity of the Strawberry crop, but the fruit has been very good. We had rather severe frost at the end of May, but except in the case of Black Currants little harm was done to the fruit crops. *H. Goude, Educational Department, Shirehall, Norwich.*

—— Apples are decidedly scarce; but after the last two seasons more could not well be expected. Pears are plentiful and look healthy and well. Strawberries were very promising at the beginning of the season, but the frosts in early May spoilt the blooms. Peaches are plentiful and look promising. *William Orr, High House, Church Road, Downham Market.*

Rutlandshire.—Our garden consists of three different soils, namely black loam, red loam and heavy clay; the fruit crops are very poor on account of spring frosts. *Wm. Smith, Lyndon Hall Gardens, Oakham.*

Suffolk.—In this part of England appearances point to an average crop of all kinds of fruit with the exception of Strawberries, which have proved very disappointing. Frost destroyed the blossoms in many places, and the drought has completed the damage where the fruits did not set quickly. The rainfall for May was under 1 inch. Gooseberries are plentiful. Insect pests are very prevalent. *E. G. Creek, Shire Hall, Bury St. Edmunds.*

—— There was a fine show of blossom, succeeded by a good set of fruit. During the flowering period the weather was, on the whole, favourable. Later on the young fruits suffered from the effects of cold east winds, which considerably reduced the crop of stone fruits. In this district we are suffering from the effects of a prolonged drought, and the prospects of the Apple and Pear crops are doubtful, many of the young fruits already falling for lack of moisture. It has been a record season for insect pests. *W. Messenger, Woolverstone Park Gardens, Ipswich.*

—— The fruit crops in this district are, on the whole, good. Apples are the most disappointing crop. The trees bloomed well, but the fruit set badly. Strawberries promised well, but the long-continued drought prevented the fruit from attaining any size. Small fruits, especially Raspberries, are very good. Our soil is a calcareous loam on gravel. *Thomas Stiling, Livermere Park Gardens, Bury St. Edmunds.*

—— There was at one time an excellent promise of fruit, but late frosts commenced destruction and a drought caused Strawberries and other small fruits to suffer. Plants and trees were most promising in spring, but the promise will not be fulfilled. There may be average crops. Plums in this district are plentiful. *R. Evans, Great Barton, Bury St. Edmunds.*

—— We owe our favourable report of the fruit crops to the fact that we are sheltered by belts of trees on the north and east sides, which have protected us from the late severe frosts. In these gardens the only crops damaged by frost were early Potatos, Gooseberries and Currants. Pears are plentiful, but were unfortunately badly attacked by the Pear midge (Diplosis pyrivora), especially the varieties Williams' Bon Chrêtien, Marie Louise, Pitmaston Duchess and Jargonelle being the worst victims. Peaches, Nectarines and Apricots are good on walls. Strawberries, although plentiful, suffered from the drought, and were not so large as usual. The crop of Black Currants is excellent. The two kitchen gardens here are dissimilar in point of soil, one being a light sandy soil on gravel, the other a medium loam on clay. *A. K. Turner, Orwell Park Gardens, Ipswich.*

—— Apples were fairly promising in the early part of the season, but the frosts in May and long drought prevented the blossoms from setting. The soil varies in composition. *James A. Best, Easton Park Gardens, Wickham Market.*

4, MIDLAND COUNTIES.

Bedfordshire.—Practically all the fruit in the orchards on heavy land in low-lying districts of Bedfordshire was destroyed by frosts. We registered 10° on May 26, 13° on May 27, 8° on May 28, and 5° on June 8 around Eaton Bray (which is a large Plum growing district). The Plum crop was totally destroyed. At the Woburn Experimental Fruit Farm all the Plums, Cherries and Damsons, 90 per cent. of the Apples, Strawberries, Gooseberries and Currants, and 99 per cent. of the Raspberries were destroyed by the frost. Previous to the frost there was every indication of record crops all round, Strawberries and Raspberries looking especially promising. *W. H. Neild, Woburn Experimental Fruit Farm, Ridgmont, Aspley Guise.*

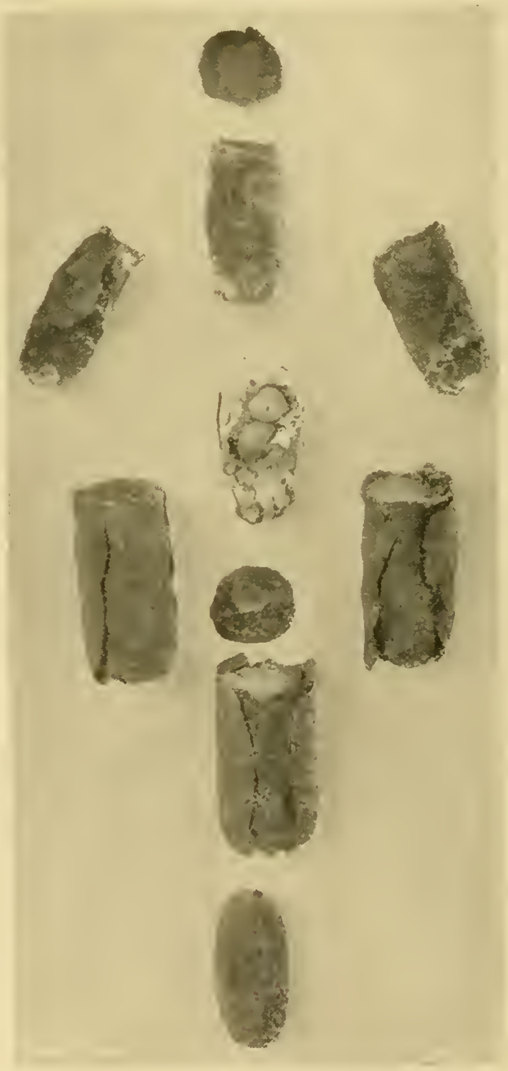


Fig. 56.—NESTS OF THE LEAF-CUTTING BEE, SHOWING PUPAE, COCOONS AND CAPPINGS.
(See p. 137.)

—— Fruit trees in this district are showing remarkable crops of fruit this year, especially Apples, Peaches, Apricots and Plums. Strawberries are not quite so good owing to the late frosts. This is a light, sandy soil, with a subsoil of sand. *C. J. Ellett, Chicsands Priory Gardens, Shefford.*

—— It has been a disappointing season in many ways. First of all too much rain, then drought for about six weeks, followed by a severe frost, which in the Valley of the Ouse, where Bedford lies, was very disastrous. It demonstrated how desirable it is not to plant fruit at the bottom of a valley, as on any small hills or raised positions the fruit entirely escaped the frost. We were very short of bees in this district, and attribute the non-setting of many varieties to this cause. Cox's Orange Pippin, however, which is a self-sterile variety, has set remarkably well. The Strawberry season has been a very variable one. In some districts there has been practically no fruit owing to the May frosts; in other districts they escaped, and there has been a plentiful supply. We have had a very good season here; we commenced to gather on June 3 and finished on July 20. Several varieties have done exceptionally well. King George has proved itself a trifle earlier than Royal Sovereign, and we think where Royal Sovereign does not succeed this will take its place. It has also proved itself a week earlier where forced. The Bedford has done well again this year Utility as a later variety has done exceptionally well. Among late varieties nothing has done half so well as Laxton's Latest. Of the older varieties we find Sir Joseph Paxton is worn out, and the fruits are very diminished in size. This also applies to President and Vicomtesse Héricart de Thury. Pineapple is one of the richest flavoured varieties we know. The Queen has also been highly flavoured again this year. Of the perpetual varieties, Perpetual is the freest. Of the new varieties of perpetuals White Perpetual and Everbearing are showing well. *Laxton Brothers, Bedford.*

—— Apples, Strawberries and Walnuts are a failure. They looked promising earlier in the season, but the severe frosts that occurred towards the latter part of May ruined these crops, The soil is a stiff loam on clay, and the trees canker badly. *Thos. W. Stanton, Hinwick Hall Gardens, Wellingborough.*

—— Although the Apple trees here were well furnished with buds and flowered profusely, the crop this season is very much below the average, owing to adverse conditions of weather at the time of flowering. Peaches, Pears, Plums and Cherries are prolific, clean and healthy. Bush fruits and Raspberries are bearing excellent crops. We grow a considerable number of Cordon Gooseberries and Currants, which we find reliable. This year they are producing heavy crops of fine quality fruits. Strawberries have been excellent, both in quantity and quality; our most reliable varieties are Royal Sovereign, Givon's Late Prolific and Waterloo. The soil is a moderately heavy one, overlying a flinty clay on chalk. *A. W. Metcalfe, Luton Hoo Gardens, Luton.*

Buckinghamshire.—All fruit trees blossomed well, with every promise of heavy crops of fruit, but the late frosts seriously affected the greater portion of the fruit crops in this district. Some orchards are absolutely devoid of fruit. Most of the trees are badly infested with black fly, and in some cases with mildew. Strawberries would have been plentiful, but owing to unfavourable weather were much below the average, and the quality was poor. It is one of the most disappointing seasons we have experienced. Our soil is a heavy, retentive loam, resting on clay and the natural drainage is bad. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

—— The late May frosts did considerable damage to the fruit crops here, especially Strawberries and Plums. The Apple and Pear crops are average and look promising. Small fruits are good. The soil is heavy clay. *Geoffrey Cooper, Bletchley Park Gardens.*

—— The hardy fruit crops are above the average and the quality is good. In neighbouring low-lying gardens in this locality the severe May frosts did much damage to the fruit crops, the small fruits and Strawberries in particular having suffered considerably. *G. F. Johnson, Waddesdon Gardens, Aylesbury.*

—— The fruit crops in South Bucks are, with the exception of Strawberries, quite average. Cherries were of splendid quality, and very plentiful. Apples are poor in some orchards, but where the cultivation is good and spraying has been attended to there are good crops of clean fruit. Pears on walls and in the open promise well; the same remark applies to Plums. Bush fruits of all kinds are plentiful and of good quality. The severe frosts in May ruined what would otherwise have been an excellent Strawberry crop, the variety Royal Sovereign being the chief offender. Laxton's Reward was the only variety to carry a full crop in these gardens. *Chas. Page, Dropmore Gardens, Maidenhead.*

—— The late frosts of May did a considerable amount of damage, 8° being registered on the 26th and 27th, and 5° on the 28th, and the Strawberries were ruined. Potatos, Runner Beans, and other tender crops were also considerably damaged. Apples are small in quantity and falling in numbers. Rain is wanted badly. The soil here is a heavy loam overlying Oxford clay. *A. E. Caudle, Shenley Park Gardens, Bletchley.*

CHESHIRE.—My general report for the season 1914 is excellent. All crops are most satisfactory. The late frosts did some damage to Strawberry bloom, but there was a fair crop. *Alfred N. Jones, Marbury Hall Gardens, Northwich.*

—— The crops generally are most satisfactory, and our gardens are comparatively free from the pests which have attacked some of the trees here. There are a few trees suffering from red spider and caterpillars, the latter on the Gooseberries, but not to any extent. We did not experience frost here when the Pears and Apples were in bloom, but when the Strawberries were flowering there were 2° to 3° of frost, which is the cause of the light crop. The dry spring was the cause of the smallness of the fruit. We are on red sandstone and suffer from drought, but the situation is warm, and sheltered from the north and east winds. *Lion Squibbs, Bidston Court Gardens, Birkenhead.*

—— The prospects for fruit in this district are very good, with the exception of Apples and Strawberries. These two crops suffered from severe frosts while they were in bloom. Late-flowering Apples in some cases are plentiful, and look promising. *Charles Flack, Cholmondly Castle Gardens, Malpas.*

—— The soil here has been under cultivation over 100 years, and is in good condition. The old Apple trees are cropped better than those recently planted as regards quantity, but there is not much to choose between the old and young Pears. Fruit on walls is more plentiful than last year, except Morello Cherries. These have fallen badly during the past week or two. Black Currants on walls and bushes are particularly good. Speaking generally, fruit, both as regards quantity and quality, compares unfavourably with that of recent years. *T. A. Summerfield, Alderly Park Gardens, Chelford.*

—— The position of the fruit-growing quarter here is rather exposed, standing on a slight elevation midway between the Cheshire Hills on the one side and the Welsh Hills of Flintshire on the other. The soil is of a light, sandy nature on the top of a substratum of old red sandstone. The trees have all been planted within the last fifteen years, are mostly on the Paradise stock, and of bush form. The trees are usually sprayed twice a year—once in the autumn with alkali wash, and again in the spring, just before coming into flower, with lime and sulphur. At no period was there a better promise of an abundant crop than this spring, but 10° of frost on the morning of May 2, following on a shower of rain, completely destroyed the blossom, and there is only a sprinkling on most of the trees. Cox's Orange Pippin is the only exception in Apples. Pears are abundant, and the trees are clean. They were in flower in April when there was plenty of sunshine. *H. F. Barnes, Eaton Hall Gardens, Chester.*

DERBYSHIRE.—The Apple and Plum crops in this district are very disappointing. There was a good show of bloom, but the bright summer weather we had after April 12 developed growth too quickly, and the tender shoots could not withstand injury from the severe frosts of the first and last weeks of May. Some sheltered trees of Apples have good crops, but there are whole orchards without any fruit. The early Strawberry crops were much damaged by frost, but recovered well. Black Prince Strawberry growing in a bed did not suffer much, and has given a good crop. Givon's Late Prolific was very little damaged; the thick-growing foliage of that variety makes it valuable. Loganberries were damaged, but they are giving good crops of fine fruit. Black Currants are yielding well. Potatos and other vegetables were injured by frost at the end of May, but there is now quite a luxurious growth. The subsoil in this district is heavy clay. *Bailey Wadds, Uttoxeter New Road, Derby.*

(To be continued.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

LEAF-CUTTING BEE.—During the past three or four years we have been troubled with a peculiar bee, which has taken up its abode in all the wooden plates of the greenhouses of our nursery. The bees first appeared in the old walls, scraping out the mortar and building cells of Rose leaves, at the base of which a quantity of pollen and honey was deposited and a grub laid, which seems to develop the following spring into a full-grown bee. Our Roses have been badly mutilated by the bees, which cut a complete circle from the leaves, five or six on each leaf, and bear them away to the wall-plates. They then bore holes, casting out great quantities of sawdust, and build the cells in groves in a line (see fig. 57). We have been unable to dislodge them, even by boring out holes and injecting turpentine, so have been compelled to re-bed the houses. It appears that all this might have been avoided by laying the plates on slate or tarred felt, which would also have preserved the timber, which rotted from the bottom, leaving only a mere shell.—*W. G. Williams.*

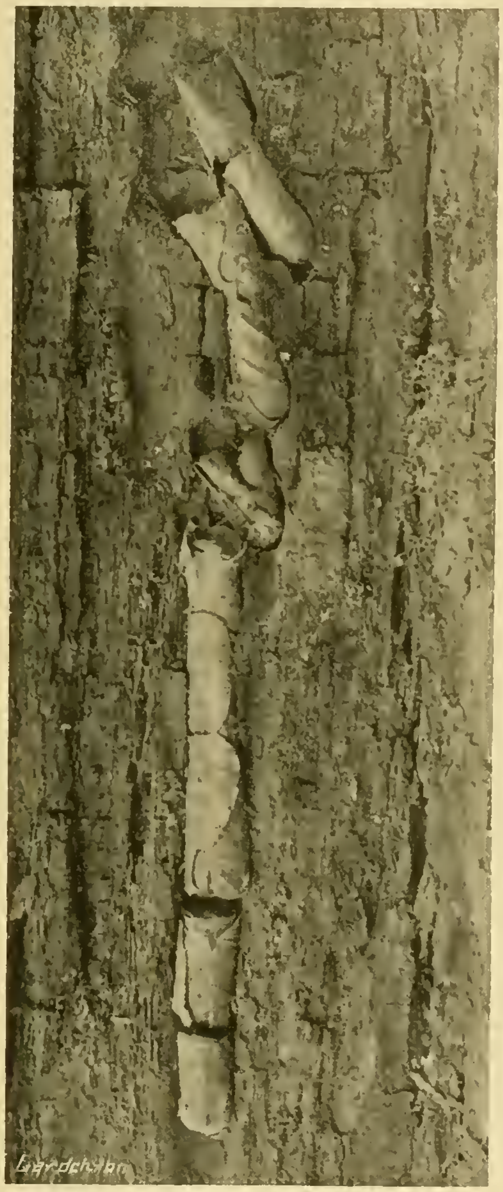


FIG. 57.—NESTS OF THE LEAF-CUTTING BEE IN DECAYING WOODWORK OF A GREENHOUSE.

[The specimen sent is a nest of the leaf-cutter bee, most probably Megachile centuncularis. M. Willughbiella is usually found in decaying Willow, the former in any decaying wood, and both make their nests of Rose leaves. M. centuncularis is apparently more common in the London district, M. Willughbiella in the Midlands.—EDS.]

LARGE PEACHES.—Gathering Barrington Peaches the other day I picked six which together weighed 2 lbs. 12 ozs. I do not suggest that this is a record in weight, but I think their weight is above the average. They were not grown for exhibition. *W. S., S. B.*

[On reference to our "Record Book" we find an entry of four fruits of Royal George Peaches weighing 2½ lbs., and another referring to a single fruit of Dr. Hogg weighing 23¾ ozs.—EDS.]

LYON ROSE.—There are seventeen bushes of the Lyon Rose in a small bed here, and this season the plants have borne about 200 blooms, which averaged 5 inches across. The bushes are slightly pruned each spring, and the flowers are not disbudded. The middle or primary blooms were cut out with short stalks and floated in wide glass bowls of water in which they looked like handsome Water Lilies. I strongly recommend the Lyon Rose for its many charms and uses. *Ernest Horsley, Langford Hall Gardens, Newark.*

THE FOOD SUPPLIES.—May I offer the following remarks as to some precautions which may be taken by garden owners and gardeners to assist in the present crisis? It is not too late to plant out such vegetables as Savoys, Coleworts, and Borecoles, and any such plants as are available should be distributed and used to the best advantage, for they may be useful as food during the coming spring. Gardeners and garden instructors should endeavour to teach the community that extra sowings of Cabbage, Lettuce, Carrots, Turnips, and anything else in the shape of food which is at all likely to stand the winter, will in all probability be found very useful during the coming year. Further, all existing stocks of vegetables which may decay should be used, and anything which can be preserved, such as Runner Beans in salt, will be found useful later on. Owners of land will be doing the nation a service by preparing larger areas for Potatos next season. Labour could be employed by extending fruit plantations and in planting forest trees. *J. E.*

—— There is yet time to fill vacant ground with Turnips and Carrots, as well as with the vegetables usually sown or planted at this season. I am filling all the spaces between newly-planted Strawberries with Guérande Carrots. These are not at all injurious to the Strawberries. Greens of all kinds may still be planted, and once established should be encouraged by manuring to make as much growth as possible in the next six weeks. Means can be taken to preserve all old Peas, Beans, and French Beans, the latter for the seeds. Usually an immense amount of good food in the form of Brassicas is wasted, but the exigencies of the moment may well induce us to utilise surplus plants. We are well aware that at one time Broccoli was esteemed, not so much for its "flower" as for the tender, succulent pedicellate branchlets carrying the "flower." The inner leaves which enclose the heads previous to their expansion are also valuable. They are more tender than those of Cabbages and do not cause flatulence. A number of people esteem the pith of the stems of Cabbages. It used to be well known in the North as "Castocks," and at a time when the food supplies are threatened, those who have never tried this part of the vegetable might be induced to do so. The succulent pith of autumn Cauliflower and Broccoli will be found better than that of Cabbages, but there is a considerable amount of food in the stems of the Drumhead varieties, and also in Savoys, which ought not to be wasted. Leeks, again, are wastefully prepared, the branched parts only being used and the green blades thrown away. These are not to be despised for soup or thick broths. Full-grown Vegetable Marrows, or Pumpkins, mixed with Apples, would make pies for winter. There is much waste in the North of perishable fruit, either the price of sugar, or its scarcity, having put an end to jam making. It must be obvious to everyone that, apart from the enhanced prices that must be paid for butter, jams possess considerable food value, and, even at an increased price, jams are considerably cheaper than butter. Small fruits are bearing enormous crops, and both in England and in Scotland, Blackberries (or "Brambles" as they are called in the North) are above the average. Apples can be stored or clamped, and it is worth noting that properly matured Apples, when cooked, require the minimum quantity of sugar to render them palatable. Wild fruits other than Blackberries are perhaps negligible, though there are sometimes large crops of Barberries and Raspberries. *R. P. Brotherston.*

PLUM LA DELICIEUSE.—In his note on a recent trip in East Anglia, *Southern Grower* alludes to this old Plum, which is not now in culture. It was grown in the Swanley district as "Lady Lucy," and is also known as Cooper's Large. In the young state the leaves are very large and shiny on the upper surface. The variety is a strong grower, and forms almost a timber tree. Sixty years back were in our old orchard three or four large trees, with trunks 12-14 in. in diameter, healthy and vigorous, bearing heavy crops of large, long, oval fruits, which, when ripe, were a rich ruby red, while others were quite green, making a long season of use. The quality was superb when cooked in tarts or jams, and the pulp was very gelatinous and rich, so that I always kept plenty for home use. The largest tree was, I should think, 100 years of age before it began to fail, and it is a pity it was lost, as no other cooking Plum could equal it. It originated early in the nineteenth century from a seed of the New Orleans variety planted by Joseph Cooper, of Gloucester, New Jersey. It was possibly imported into England about 1820, under the name of La Délicieuse. *George Bunyard, Maidstone.*

SOCIETIES.

ELGIN HORTICULTURAL.

JULY 29.—The exhibition of the Elgin Horticultural Society was held on the above date, under the auspices of the Morayshire Farmers' Club. The exhibits were numerous and very fine, and were well displayed in a large tent. This was the first public exhibition held by the society, and its success did great credit to all concerned in the arrangements. There were numerous visitors, and fine weather contributed to the enjoyment of all. Sweet Peas were the chief exhibits, and were extremely well shown; there were also numerous Roses, in spite of an uncertain and difficult season. In the professional classes for Sweet Peas, J. A. GRIGOR, Esq., Seapark, Kinloss, was the chief prizewinner, and among the amateurs the Rev. E. V. KISSACK won the greater number of awards. Several nurserymen from the Elgin and Aberdeen districts sent tastefully arranged noncompetitive exhibits. Messrs. J. COCKER AND SONS, Aberdeen, showed Roses and hardy herbaceous flowers; Messrs. SMITH AND SON and Mr. M. H. SINCLAIR (also of Aberdeen) showed Roses and Sweet Peas respectively.

HIGHLAND AND AGRICULTURAL.

THE exhibition arranged by the Royal Scottish Arboricultural Society in connection with the Highland Society's show, at Hawick, on the 14th ult., was an excellent one. There were twenty competitive classes, and the competition was generally good—better than in previous years. In addition, there were several noncompetitive exhibits. Sir JOHN A. DEWAR, Bart., Dupplin, was awarded 1st prizes for timber of Scots Pine and for Norway Spruce. The 1st prizes for Larch, Ash, and Oak were won by the Earl of MINTO, and those for Elm and any three coniferous trees other than the above were awarded to the Duke of ROXBURGHE, who also excelled in the local section for coniferous trees, and in the same section for the timber of any broad-leaved trees other than those named above. With Spanish Chestnut, Sycamore, and Beech Sir JOHN DEWAR won in the open section for any three broad-leaved trees other than those above. There was a class for specimens of stems illustrating the effects of close and thin crops in branch suppression and quality of timber. A No. 3 Silver Medal was awarded to Capt. SPROT, of Riddell; and a No. 1 Medal to the Duke of ROXBURGHE. For collections of fungi injurious to forest trees and shrubs the following Medals were awarded:—No. 3 Silver Medal, Mr. A. FISH, Kinneil Estate; No. 2 Silver Medal, Mr. G. FRASER, Midhope, Hopetoun; No. 1 Silver Medal, Mr. H. R. MUNRO, The Park, Great Witley, Worcester.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 16.—*Committee present:* Z. A. Ward, Esq. (in the chair), Messrs. R. Ashworth, J. J. Bolton, A. G. Ellwood, A. Hanmer, J. Howes, J. Lupton, D. McLeod, C. Parker, W. Shackleton, H. Thorp, and H. Arthur (secretary).

Groups were staged by R. ASHWORTH, Esq., Newchurch (gr. Mr. Gilden) (Large Silver Medal); WM. THOMPSON, Esq., Walton Grange (gr. Mr. Howes) (Large Silver Medal); Col. J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton) (Large Silver Medal); and O. O. WRIGLEY, Esq., Bury (gr. Mr. Rogers).

AWARDS.

FIRST-CLASS CERTIFICATE.

Odontioda Brewii "Merl Dene" var., a fine flower, with light purple lip and dark spotting, from A. J. OAKSHOTT, Esq.

AWARDS OF MERIT.

Cattleya gigas Walton Giant, *Odontoglossum eximium purpurescens*, and *O. × Mrs. A. E. Thompson*, all from WM. THOMPSON, Esq.

Cattleya gigas coloratum, from R. ASHWORTH, Esq.

CULTURAL CERTIFICATES AND BRONZE MEDALS.

Mr. E. ROGERS (gr. to O. O. Wrigley, Esq.) for *Anguloa Ruckeriana sanguinea* and *Lycaste tricolor albens*.

Mr. J. HOWES (gr. to Wm. Thompson, Esq.) for *Cattleya gigas Walton Giant*.

KILLARNEY HORTICULTURAL AND INDUSTRIAL.

JULY 30.—The Fourth Annual Show of the above Society was held on this date in the grounds of Killarney House, until recently the residence of the Earl of Kenmare, but, unfortunately, the mansion was destroyed by fire last autumn.

The various classes were well contested, and exceptionally fine Gladioli were shown. The first prize for hardy herbaceous perennials was awarded to the Earl of KENMARE (gr. Mr. A. J. Elgar), and the 2nd to A. R. VINCENT, Esq. (gr. Mr. L. Nelson). The 1st prize for Annuals was won by S. D. CROSBIE, Esq. (gr. Mr. Barrett); 2nd, the Earl of KENMARE.

The best Gladioli were shown by A. R. VINCENT, Esq.; 2nd, Mrs. LEACHY (gr. Mr. W. Lapham). For perennial Phloxes, the Earl of KENMARE was placed 1st, and Mr. VINCENT 2nd. The best vegetables were shown by T. D. CROSBIE, Esq. The Sweet Pea classes were disappointing, owing to the recent unfavourable weather. The Challenge Cup, open to All Ireland, was awarded to Mr. VINCENT, and he was also placed 1st in the classes for 12 distinct varieties, and the three best novelties, with the varieties Orchid, King White, and H. Wedgewood.

The amateur classes were well represented by exhibits; Sweet Peas and hardy border annuals and perennials were strikingly good. The 1st prize for hardy flowers was awarded to T. GREAMY, Esq.

Non-competitive Exhibits.—Messrs. ALEX. DICKSON AND SONS, Newtownards, staged seeds in various stages of germination, and also Sweet Peas; Messrs. JONES, Kilkenny, showed Gladioli; Messrs. W. BAYLOR, HARTLAND, AND SONS exhibited Carnations, hardy herbaceous plants, flowering shrubs, Orchids, and Alpines.

PUBLICATIONS RECEIVED.—*Journal of Genetics* for June. (Cambridge University Press.) 10s.—*Report of the Fourteenth Meeting of the Australasian Association for the Advancement of Science, held at Melbourne, 1913.* Edited by T. S. Hall, M.A., D.Sc. (Published by the Association, 5, Elizabeth Street, Sydney.)—

MARKETS.

COVENT GARDEN, August 12.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report.—EDS.]

Cut Flowers, &c.: Average Wholesale Prices

	s.d. s.d.
Alstromeria, per doz. bunches ..	2 0- 2 6
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	0 6- 1 0
— smaller, per doz. bunches ..	2 0- 4 0
— Carola (crimson), extra large	1 0- 1 6
— Malmaison, per doz. blooms	
— — pink ..	5 0- 6 0
Chrysanthemum, white, per doz. blooms ..	0 9- 1 3
— yellow, per doz. blooms ..	1 0- 1 6
Coreopsis, per doz. bunches ..	0 6- 0 9
Delphinium, large blue, per doz. bunches ..	3 0- —
Eucharis, per doz.	0 6- 1 0
Gaillardia, per doz. bunches ..	0 9- 1 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 1 6
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus, America, pale pink, per doz. spikes ..	0 9- 1 0
— brenchleyense, scarlet, per doz. spikes	0 9- 1 0
— Pink Beauty, per doz. spikes	0 6- 0 9
— The Bride ..	4 0- 5 0
English ..	4 0- 5 0
Gypsophila paniculata, per doz. bunches ..	2 0- 3 0
— white	2 0- 4 0
— — double, per doz bunches ..	2 0- 3 0
Lapageria alba, per doz. blooms ..	1 0- 2 0
Lavender, per bnch.	0 6- 0 9
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long .	1 0- 1 3
— — short ..	0 9- 1 0
— lancifolium album, long ..	1 0- 1 6

	s. d. s. d.
Lilium lancifolium, album, short ..	1 0- 1 6
— rubrum, per doz., long ..	1 0- 1 3
— — short ..	1 0- 1 3
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	10 0-12 0
— special	8 0-10 0
— ordinary ..	6 0- 8 0
Marguerites, per doz. bunches ..	1 0- 1 6
Orchids, per doz.:	
— Cattleya ..	12 0-15 0
— Harrisonii, per doz. blooms ..	6 0 —
— Odontoglossum crispum ..	3 0- 4 0
Pancratium, per dozen blooms..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Roses: per dozen blooms, Frau Karl Druschki	1 0- —
— Kaiserin Augusta Victoria	0 6- 0 9
— Lady Hillingdon	—
— Liberty ..	—
— Madame A. Chatenay ..	0 6- 0 9
— Melody ..	0 9- 1 0
— Mrs. J. Laing..	0 9- 1 0
— My Maryland..	—
— Niphetos ..	0 9- 1 0
— Richmond ..	—
— Sunburst ..	—
— Sunrise ..	—
— White Crawford	—
Scabiosa, mauve, per doz. bnchs.	2 0- 2 6
Statice, mauve, per doz. bunches..	2 0- 3 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	0 9- 1 0
Stocks, English, white, per doz. bunches	2 6- 3 0
— pink, per doz. bunches ..	2 6- 3 0
— mauve, per doz. bunches ..	3 0- 4 0
Sweet Peas, white and coloured, per doz. bun.	—
Sweet Sultan, mauve per doz. bnchs.	2 0- 2 6
— yellow	2 0- 2 6
— white	1 6- 2 0
White Heather, per doz. bunches..	0 6- 0 9

Cut Foliage, &c.: Average Wholesale Prices

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Carnation foliage, doz. bunches ..	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Lichen Moss, per dozen boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved ..	6 0 —
— French.. ..	1 0 —
Smilax, per bunch of 6 trails ..	1 0- 1 3

REMARKS.—In the serious state of affairs which now exists it is impossible to give any accurate forecast in connection with supplies or prices. At the present time trade is exceptionally quiet and everything is going very cheaply. Chrysanthemums are now to hand. A few white blooms of Countess and yellow Mercédès can be obtained at a very low price. There is abundant supply of white Asters. Coloured varieties are increasing daily, and mauve and pink blooms are especially fine. There has been no arrival of Gladioli from Holland this week, but there are sufficient English flowers grown at present. "The Bride" is realising the best prices because, as a rule, this variety comes largely from Holland. Liliums such as L. auratum, L. Harrisii, L. album and L. roseum are of good quality, but there is no demand for Lilies-of-the-Valley. Carnations are too plentiful, and salesmen find it very difficult to clear at any price. Roses also are very difficult to sell; possibly Mme. Abel Chatenay is the best variety just now. But even the best produce sells very slowly and trade is practically at a standstill

Plants in Pots, &c.: Average Wholesale Prices

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
– variegated ..	30 0-60 0
Asters, Coloured 48's, per dozen	4 0 6 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Campanula isophylla, white, 48's per doz.. ..	10 0-12 0
— — blue, 48's per doz. ..	6 0- 8 0
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, per dozen, 60's	6 0-12 0
— larger, each ..	2 6-10 6
Croton, per dozen	18 0-30 0
Dracæna, green, per dozen ..	10 0-12 0
Ferns, in thumbs, per 100.. ..	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0
— in 32's, per doz.	10 0-18 0
Fuchsias, 48's, per dozen	5 0- 6 0
Geonoma gracilis 60's per dozen..	6 0- 8 0
— larger, each ..	2 6- 7 6
Heliotropes, 48's per dozen ..	4 0- 5 0
Hydrangeas, Pink, per doz. 48's ..	10 0-18 0
— White	10 0-15 0
— Blue	15 0-30 0
— paniculata ..	18 0-24 0
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0
Kentia Forsteriana, larger, per doz.	18 0-36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, pr doz.	18 0-24 0
— — ruorum, per doz. ..	15 0-21 0
— longiflorum, per dozen ..	12 0-15 0
Lily-of-the-Valley	18 0-21 0
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	4 0- 6 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phœnix rupicola, each .. .	2 6-21 0
Spiræa, White, 32's, per dozen ..	6 0- 8 0
— Pink, 32's, per dozen .. .	9 0-12 0
Verbenas, Miss Willmott, 48's, per dozen ..	6 0- 8 0
— Scarlet King, 48's, per doz. .	6 0 —

Remarks.—The plant market is only open on Tuesdays. Thursdays and Saturdays each week until April next. The latest arrivals in this department are Asters and Chrysanthemums, principally the "Massee" type, but there seems no special demand for plants.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, Australian, per case ..	8 0 —
— English dessert, per ½ bush. ..	2 0- 4 0
— cooking, 1 bush	2 0- 3 0
Bananas, bunch:	
— Double Ex. ..	8 0-9 0
— Extra	7 0-7 6
— Medium ..	6 0- 6 6
— Giant	9 0- 9 6
— Extra medium	7 0 —
— Red, per ton ..	£20 —
— Jamaica, p. ton	£15 —
Figs, English, per doz.	1 0- 2 6
Grapes: Black Hamburgh, per lb.	0 4- 1 6
— Belgian Muscat of Alexandria, and Canon Hall, per lb.	0 9- 2 0
— English, Gros Colmar, per lb.	0 6- 1 0
— Gros Maroc, per lb. ..	0 4- 1 0
Grape Fruit, case:	
— 96's ..	18 0-25 0
— 80's ..	
— 64's ..	
— 54's ..	
Lemons, Naples, per case ..	9 0-10 0
— Palermo, per case	7 0-10 0
Melons, English ..	0 4- 1 0
— Canteloupe ..	0 4- 1 0
— Guernsey .	0 4- 1 0
— Valencia, per case	8 0-10 0
Nectarines, per doz.	1 0- 3 0
Nuts:	
— Almonds, sack	64 0-65 0
— Barcelona, sack	44 0 —
— Brazils, cwt.	46 0-50 0
— Coco-nuts, per 100	18 0-22 3
Oranges:	
— Cape, per case	16 0-18 0
— — Navel, p. case	19 0-22 0
— Naartjes, box..	2 0- 2 6
— Naples, case ..	6 0- 9 0
Peaches, English, per doz. ..	1 0- 4 0
Plums, blue, per ½ sieve ..	1 0- 1 6
— English, per ½ bushel	1 0- 1 6
— Orleans, per ½ sieve	1 0- 1 6
— Royals, per ½ sieve	1 0- 1 6

Remarks.—Owing to the war foreign supplies have practically ceased, and it is almost impossible to give any accurate forecast as to supplies or prices. Fortunately the home-grown crops are heavy; there is even a difficulty in selling them while the mobilisation continues. Choice dessert fruits have found scarcely any purchasers, consequently the market is over-supplied. With reference to cooking fruits, of which there are abundant supplies, there is practically no demand owing to the high price of sugar. We are informed by the growers that the fruit and vegetable crops have not been so good for some years past, the only exception being Onions, which continue dear. Potatos have yielded a far heavier crop than was anticipated; consequently prices have dropped Root vegetables are likely to increase in value, as extra supplies may be required for the troops. Home-growers should benefit considerably by the absence of Continental shipments of fruits and vegetables, as we shall have to depend upon English-grown supplies

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, ground, per ½ sieve ..	1 0- 1 6
Beans, Scarlet Runner, per bushel	1 0- 1 6
Beetroot, per bushel, long ..	3 0 —
— round	2 0 —
Cabbages, per tally	6 0- 8 0
Carrots, per doz. ..	1 0- 1 3
Celery, per bundle	0 8- 0 9
Cucumbers, per flat	1 6- 2 6
Garlic, per strike..	2 6- 3 0
Horseradish, 12 bundles ..	18 0-21 0
Leeks, per dozen ..	2 0- 3 0
Lettuce, English, Cos. (per tally 5 doz.).. ..	7 6-10 0
— English, round per box.. ..	4 6 —
Marrows, per pad	2 0 —
Mint, per doz. ..	2 0 —
Mushrooms, cultivated per lb...	0 6 —
— Broilers ..	0 3 —
— Buttons .	0 8 —
— Outdoor, p. peck	1 0 —
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, picklers, per ½ bushel ..	3 0- 3 6
— Spring, per doz.	2 0- 3 0
— Lisbon, box ..	8 0- 9 0
Parsley, per dozen bunches ..	3 0- 4 0
Peas, English, bushel	3 0- 4 0

Vegetables—Average Wholesale Prices—*cont.*

	s.d. s.d.
Peas, English, bags	5 0- 8 0
Radishes, per doz.	1 0- 2 0
Sage, per dozen ..	1 6- 2 0
Spinach, per bushel	2 6- 3 0
Swedes, bag ..	1 6- 2 0
Tomatos, English, per doz. lbs. ..	2 0- 2 3
Tomatos.—*Con.*	
– seconds ..	1 0 —
Thyme, per dozen bunches ..	2 0- 6 0
Turnip, English, per dozen bunches	3 0 —
Watercress, per doz.	0 4- 0 6

New Potatos.

	s. d. s. d.
Bedfords	3 6- 4 0
Blacklands	3 6- 3 9
Lincolns	3 6- 4 0
Kents	3 6- 4 0
Essex	3 6- 4 0

Remarks.—Trade is very slow, and prices have fallen. The demand is not equal to the supply. Stocks in London are very large.—*Edward J. Newborn, Covent Garden and St. Pancras, Aug. 12, 1914.*

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending August 8, is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

The main wind current, determined by depressions moving in a north-easterly direction over our western and northern districts or on a similar track on the Atlantic, was between south and south-west, and the force generally light or moderate. It varied somewhat in England, however, on Wednesday, when a secondary disturbance travelled from the South-western Counties to the North Sea. These winds from the south-westward brought a rather low day temperature, and a good deal of rain. In Ireland more or less rain fell daily, and in most parts of Great Britain there was a measurable quantity nearly every day. The rainfall was occasionally heavy over a considerable area. On the 2nd there was 1.18 inch at Manchester, 1.02 inch at Nairn, and 1.54 inch at Balmoral; on the 4th 1.01 inch at Salisbury and Weymouth; on the 7th 1.02 inch at Valencia, and on the 8th more than an inch at several stations in the South-west of Scotland and the North-west of England, as well as at Bettws-y-Coed. The heaviest falls were about 1.35 inch at Lancaster, Crieff, and Bettws-y-Coed, and 1.45 inch at Aspatria. Thunderstorms occurred at Dublin and locally on the East Coast of England on the 2nd, and in various parts of Southern England, and also at Crathes on the 5th.

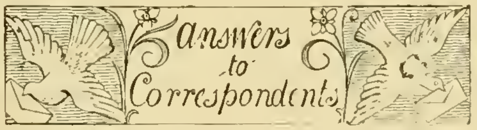
THE WEATHER IN WEST HERTS.

Week ending August 12.

A Return to Warmer Weather.—The weather remained cool for the time of year until the 8th, but since then higher temperatures have prevailed, and on the last two days the highest readings in the thermometer screen were respectively 74° and 77°. On the coldest night the exposed thermometer fell to within 7° of the freezing-point. On the contrary, during the following night the same thermometer did not fall below 58°, making this with one exception the warmest night recorded here in August during the twenty-eight years over which my records at Berkhamsted extend. The ground is still 1° colder than is seasonable at 2 feet deep, but is slightly warmer than the average at 1 foot deep. Some rain fell on the first four days of the week, and to the total depth of about half an inch. Rain fell on each of the nine days ending the 8th. the total measurement amounting to 1¼ inches. Of that rainfall about one-fifth has passed through the bare soil percolation gauge—equivalent to a gallon on each square yard of surface in my garden; but the gauge on which short grass is growing has been in no way affected by it. The sun shone on an average during the week for four hours a day, which is two hours a day short of the usual duration at this period in August. The winds were again light and have come almost exclusively from some point of the compass between south and west. The mean amount of moisture in the air at 3 p.m. exceeded a seasonable quantity for that hour by 7 per cent. *E. M., Berkhamsted, August 12, 1914.*

TRADE NOTE.

Mr. Taudevin, until recently manager of the firm of Messrs. Young and Co., Cheltenham, Carnation growers, has relinquished his connection with the firm.



Abutilon vitifolium: *R. A. L.* The failure of the plants to flower is due to too generous treatment, as indicated by the plant's "very strong" growth. Keep the plants, both inside and outside, moderately dry at the roots. Later on root-prune both of them, but do not shorten the growths severely. The beneficial effects of ripening the wood by exposure to sun from now onwards will be advantageous. Good turfy loam and lime rubble will be better than peat or leaf-mould, and manure should not be employed.

Address: *M. B., Java.* Mr. H. W. Kruckeberg, secretary, California Association of Nurserymen, 237, Franklin-street, Los Angeles, California.

Annuals for Successional Flowering: *H. M.* Fifteen good annuals for sowing in the open are Alonsoa Warscewiczii, Calendula Orange King, Chrysanthemums Evening and Morning Star, Clarkias Brilliant Rose, Firefly and Salmon, Coreopsis Drummondii, C. tinctoria, Dimorphotheca aurantica, Candytufts, Godetias Double Rose and Crimson King, Jacobea in variety, Larkspurs, Poppies, Linarias, Linums in variety, Lavatera splendens, and Nigella Miss Jekyll. In addition, Asters, Stocks, Gaillardias, Salpiglossis, Scabious, Schizanthus, Verbenas, and Antirrhinums may all be grown as annuals with very little protection.

Apple Warner's King Dropping: *J. D. J.* The cause of the Apples dropping and cracking is not disease but some unsuitable condition of growth, perhaps caused by drought earlier in the season. Fungus has appeared on the wounded part, but it is not the primary cause of the trouble.

Chrysanthemum Leaves Injured: *H. A.* The leaves are injured by insect punctures. Spray the plants, or, better still, dip them in an insecticide.

Figs: *R. A. L.* The cause of the fruits dropping before they are ripe is indicated in your letter. "The tree gets larger every year." Try root-pruning just before the leaves fall. Work the soil from under the tree, and cut away any succulent, sappy roots. Sever them with a sharp knife, and rub lime over the cut surface. Spread the roots horizontally, and cover them with about 5 inches of soil, and water the latter freely. Prune the tree somewhat severely, cutting away all sappy, strong shoots, and dress the cut surfaces with knotting. Do not leave sufficient shoots to cause overcrowding another season. The foliage of a Fig tree should not cause any more shade than that imparted by well-managed vines, and let the soil be turfy, calcareous loam mixed with pulverised lime rubble, but add no manure. When all is finished tread the border firmly. Do not attempt to force the tree another season.

Gall-like Excrescences on Whin: *Anxious.* The curious little galls on the Whin branch are caused by the larvae of an insect which is quite new to us. We will endeavour to rear the perfect insect and advise you later

Kitchen Garden: *L. D.* If the soil is sandy it may be no great advantage to trench it, in which case the turf should be buried a good spit deep. The turf will help to add body to the ground, and as it decays furnish a rich store of valuable plant foods, besides making the ground more retentive of moisture. The gas lime will be valuable if wireworms are present, which frequently happens in old pasture, and lime would be of benefit in other ways. But you must remember that gas lime is a very corrosive material and harmful to plant life. The land must therefore remain fallow for a time if it is used, but after some months the mellowing influences of the weather will have rendered it harmless.

Leeks with Whitish Streaks: *T. R.* The bleached spots are caused by Onion mildew. Next season spray the crop with a solution of sulphate of iron, 1 oz. in 5 gallons of water. It is late now to commence spraying.

Lilies for Forcing: *Maidment.* The best Liliums for forcing are L. longiflorum, L. formosum and L. giganteum. The South African bulbs of this species will, by careful cultivation, furnish a succession of flowers the whole year. L. speciosum (syn. L. lancifolium) comes next in merit, whilst L. auratum, the most striking of all, is equally good. Retarded bulbs of Lilies may be had, and there need be no difficulty in maintaining a regular supply of these handsome flowers.

Mildew on Grapes: *W. E. P.* If the bunches have not been cut, do not use flowers of sulphur, but spray the foliage twice a week with liver of sulphur, 1 oz. in 4 gallons of water.

Moth in Beehive: *E. Musk.* Though the specimen you sent is completely denuded of its bright colours it is undoubtedly the Death's Head Hawk moth, Acherontia atropos. This moth is often attracted by bees, but it is perfectly harmless.

Mulberry Tree Growing Unevenly: *E. W.* No harm would be done in cutting the Mulberry tree back in the spring, and you might remove a branch altogether back to the stem. But we do not advise you to do this, for an extra prop or two on the east side would give all the support necessary until the tree balances itself. As the weakest side is on the west, this is sure to increase as the tree gets older and becomes more sheltered. An irregularly-shaped Mulberry tree is an ornament, and has a charm about it that few other trees possess.

"Muscat" Vine Leaves Injured: *B. C. B.* The injury is due to scorching. Ventilate the house early in the day, so that any moisture on the leaves may disappear before the sun's rays become powerful.

Names of Fruits: *W. E. P.* Cherry Kentish Bigarreau.—*J. D. C.* Nectarine Early Rivers. The fruit presumably has been shaded by the foliage.—*E. F.* Nectarine Hardwicke.

Names of Plants: *C. G.* 1, Spiraea cantoniensis; 2, Rubus deliciosus; 3, Sedum Aizoon; 4, Polygonum brunonianum; 5, Symphoricarpus orbiculatus var. variegatus; 6, Polygonum amplexicaule; 7, Ceanothus azureus; 8, Lychnis dioica fl. pl.; 9, Spiraea Lindleyana; 10, too withered to identify; 11, Thalictrum minus. — *Tom White.* "Samphire," Crithmum maritimum. It is edible and yields a well-known pickled condiment.—*T. A. H.* and *G. M.* Acanthus spinosus.—*Conway.* 1, Veronica tobareorrensis; 2, Olearia macrodonta; 3 and 4, specimens too scrappy for identification; 5, Spiraea japonica. —*Midland.* 1, Sedum roseum; 2, Veronica pinguifolia.—*B. and Sons.* Dactylis glomerata, "Cocksfoot Grass."—*T. H. C.* The grass may be an Agrostis, but the scrap sent is not sufficient for identification. The only way to rid the lawn of it is to dig out the roots.—*J. W. W.* 1, Tecoma jasminoides; 2, Tecoma grandiflora; 3, Kalanchoë flammea; 4, Deutzia crenata flore pleno; 5, Pauletia aculeata; 6, Spiraea ariaefolia.— —*H. C.* Allium angulosum; 1, Fuchsia Riccartoni; 2, F. macrostemma.—*C. H. Hough* Veronica speciosa var

Nerine Fothergillii: *B.* The blisters on the bulbs are caused by mites, and are not contagious. Dust sulphur on the bulbs, and the spotting will soon cease.

Pancratium illyricum: *Dorset Gardener.* This plant is a deciduous, half-hardy bulb, flowering in the summer, the flowers appearing with the leaves. The bulbs should be lifted in late autumn and stored in dry sand in a cool, airy shed. In places where the bulbs can be kept dry by placing a light over them during the winter months they may remain in the ground all the winter. The same applies to Hymenocallis Harrisiana, which requires to be kept on the dry side during its period of rest. Both plants are of easy culture if treated as advised, and should flower annually.

Pears Diseased: *T. T.* The injury is known as Bitter-pit, for which no cure is known.

Rose Leaves Injured: *Fitzgerald.* We cannot say definitely what has caused the injury to the Rose leaves, but the incisions are very like those produced by the larvae of the Rose sawfly (see p. 137). If there are no such larvae present upon the plants the probabilities are that they have matured and pupated, so that you will see nothing more of them this season. Such larvae and insects of many kinds may be collected by jarring the plants over an inverted umbrella.

Starting a Small Flower Nursery: *Miss H. R.* As you do not require more land than you can work yourself half an acre would suffice, but with a view to extending the business in the near future it would be advisable to secure an acre. The kind of land suitable for your purpose is a rich, loamy soil of good depth and light rather than heavy in texture, where water is not likely to accumulate at any time. Obtain, if possible, a piece of old pasture land fairly close to a railway station and a prosperous town in which you could dispose of your produce. Before settling finally upon the land test the depth and quality of the soil in several places in order to ascertain that it is of the description you require. The land should be ploughed and harrowed early in the ensuing year, cleaned of weeds, and, if lumpy, rolled when in a fit condition and harrowed again before ploughing in a good dressing of short manure towards the end of February or early in March; harrow once more to produce a fairly even surface in readiness for planting. With regard to the amount of capital required, the cost of land a few miles from a large town and close to a main road would be about £150 per acre. The preparation and fencing of the land and the erection of a wooden packing shed on a brick foundation close to the entrance, together with the provision of a suitable gate, would cost about £50, while £25 would about cover the initial cost of seeds and plants necessary for the cropping of the ground and help in planting. If you confine your enterprise to half an acre of land the initial cost will, as a matter of course, be only a little more than half the amounts indicated. We advise you not to include the culture of vegetables for market except as "catch crops" in the way of French Beans and Lettuces, and to grow all flowers instead. By doing so you could then depend upon receiving a reasonable profit from your investment the first year. You will require to possess a couple of three-light garden frames to raise seedlings. Make plantings of yellow and white Marguerites towards the middle or end of April in rows 2 feet apart and at 18 inches from plant to plant in the row, allowing 3 feet alleys between every fourth row. Good planting of Asters of the tall branching sections of the Comet and Ostrich types, including such varieties as early Salmon Blush, Early Rose, Comet Express, and Autumn Queen should be made in shallow drills at short intervals from March to June. Statice sinuata rosea and alba are both popular everlasting branching flowers, the blue (sinuata) being in great demand by florists, as also are Gaillardias and tall-branching Larkspurs. These, like the Asters, should be raised in frames in March and April. A sowing of Delphinium hybrids should be made out-of-doors in shallow drills at the same time, as also should plantings of hardy perennials, such as Scabiosa caucasia, Coreopsis grandiflora, Galega officinalis alba, Phlox suffruticosa Snowdon (pure white), red and white, single and double Pyrethrums, Sidalcea flexuosa, and Gypsophila paniculata grandiflora. Summer and early autumn-flowering Chrysanthemums should also be planted. A few rows of Sweet Peas might be included, but these flowers are not very profitable. You will find helpful information in *The Book of Hardy Flowers*, price 2s. 10d., *My Gardener*, price 2s. 10d., and *Flowers and Flower Culture*, price 7½d., all of which may be obtained from our publishing department.

Sterilising Machine: *G. W. T.* Illustrations of gridiron and harrow sterilisers were published in the issue for February 14, 1914, p. 120.

Strawberries for Flavour: *H. M.* The variety British Queen is the richest flavoured of all Strawberries, but high cultivation and a warm soil are necessary to bring out the best qualities of the berries. Dr. Hogg and Vicomtesse de Thury are both excellent and reliable varieties. Sensation, Leader and Auguste Nicaise are all large-fruited varieties.

Sweet Pea Elfrida Pearson: *F. H.* Your spike of this variety with nine flowers is not a record. A spike of the variety Mrs. Hugh Dickson carried sixteen blooms, but such abnormal inflorescences are not desirable, and sprays with more than four or five flowers are generally malformations.

Sweet Peas Dropping in the Bud Stage: *W. B.* There is no trace of injury caused by either fungous or insect pest. The trouble is probably due to drought at the roots earlier in the season.

Sweet Peas Under Glass: *A Continuous Reader.* To cultivate Sweet Peas successfully under glass tall houses must be employed, as in winter the plants grow fairly tall before they commence blooming, although this defect may be somewhat modified by extra care in cultivation. The Telemly Sweet Peas are reputed good winter bloomers, but the flowers are much inferior to those of the Spencer varieties, and are not to be recommended. These varieties may be sown at once, placing three or four seeds in each 4½-inch pot and transferring the seedlings later to 8½-inch pots, in which they will flower. The plants may also be raised in the open, or, preferably, in a cold frame, placing them in a cool greenhouse about the end of September with a night temperature of about 50°. Provided a fairly rich compost is used, little manure will be necessary till the plants commence blooming, when sufficient stimulant should be afforded to keep the plants growing freely. For spring and early summer flowering the Spencer varieties are far the best, and should be sown about the second week in September. The plants may be raised in either pots or boxes; if in the latter they must be potted off singly before they have made much growth. A cold frame or greenhouse is the best place to winter them in, and on no account must growth be hastened unduly by the use of much fire heat. Potting should be done about the end of January or early in February, placing four plants in each 10 or 12-inch pot, using a good though not excessively rich compost. Pot firmly, and water with extra care until the roots are growing freely. In March the pots may be plunged in the soil of the house up to the rims, placing them almost close together in rows through the house, but allowing at least 3 feet between each row of pots. Each plant should be trained to a single stem, which should be tied to Bamboo rods, two on either side of the pot, or to strings stretched from the pot to the roof. To prevent the plants from becoming unduly tall before flowering the temperature of the house should not exceed 50° at night, and watering must be done very carefully. When the plants commence blooming the roots require a considerable quantity of water and plenty of manure. As the season advances, quick rises in the temperature must not be permitted, or the flower buds will drop, and shading will be necessary during the hottest part of the day. Good varieties for growing under glass include Mrs. Routzahn and Margaret Atlee, pink; R. F. Felton, Dobbie's Lavender, George Herbert, lavender; Thomas Stevenson, orange-scarlet; Robert Sydenham, orange; Inspector, salmon; Queen of Norway, mauve; Nora Unwin, white; and Scarlet Emperor, scarlet. Suitable works for your purpose are *Sweet Peas*, by H. J. Wright (Present-day Gardening Series), and *The Modern Culture of Sweet Peas*, by Thomas Stevenson, both of which may be obtained from our publishing department.

To Colour Sweet Peas Artifically: *J. P. Holt.* Place the stems in ordinary commercial green ink for a few hours or in aniline dye. The flowers may also be made a bright yellow by placing them in a box or other receptacle and subjecting them to the fumes of strong ammonia.

Communications Received.—J. W. B.—B., Newmarket—S. C.—W. B.—A. J. E., Wissett—B. T. H.—C. H. H.—L. V. D.—H. C.—A. W. K.—P. B., Dublin—M. B. G. A.—G. H.—Plan—Dorset Gardener—J. M., Ireland—W. H., Midland—T. R.—F. H.—W. G. B.—J. D. J.—B. M.—H. W. Ward—G. H.—A. D. W.—E. M. H.—R. W.

THE
Gardeners' Chronicle
No 1,443.—SATURDAY, AUGUST 22, 1914.

CONTENTS.

Agricultural Consultative Committee .. 149
Books, notices of—
  Flora of Malayan Peninsula 145
  Impurities of Agricultural seed 145
Early effects of the war 148
Echinopsis multiplex .. 145
Flowershows abandoned 148
Food supplies, the .. 149
Foreign correspondence 144
France, food supplies in 149
French field labour, problem of 149
French harvests .. 149
French horticulture, notes on—
  Sansevieria Laurentii 144
  The introduction into France of Aesculus Hippocastanum .. 144
Fruit, simple methods of preserving 152
Fruit crops, remarks on the 152
Hampstead amateur gardeners 148
Hawick, the season at .. 151
Hippeastrums 145
Holland, trade in .. 149
Holland and Denmark, administration of plant disease in .. 141
Hop-picking 149
Imports and exports of fruits and vegetables 148
International sympathy 149
Law note—
  Failure of Plantoids, Ltd. 155
Market gardening in the Manchester district 143
National Relief Fund .. 148
Nursery notes—
  Hillier and Sons, Winchester 150
Orchid notes and gleanings—
  Laelio-Cattleya Penarth 143
  Masdevallia curtipes 143
  Odontioda Stella .. 143
Peaches, large 152
Plants, new or noteworthy—
  Bauhinia purpurea .. 142
  Primula angustidens 142
Plum, summer pruning the 152
Pollination of Apples .. 152
Potash manures 149
"Revue Horticole" .. 149
R.H.S. Saxifrage Conference abandoned 152
Societies—
  Newark and District Hort... 154
  Royal Horticultural .. 153
  Royal Scottish Arboricultural 154
  Scottish Horticultural 154
  United Hort. Benefit and Provident .. 154
Spinach and its substitutes 151
Succulent plants, the watering of 150
Sugar, a substitute for 143
Trees and shrubs—
  Pyrus floribunda .. 141
Week's work, the .. 146, 147

ILLUSTRATIONS.

Bauhinia purpurea 142
Echinopsis multiplex 145
Hippeastrum Daphne. (Coloured Plate.)
Paulownia imperialis, fruits of 150
Sansevieria Laurentii 144
Xanthoceras sorbifolia, fruits of 151

PLANT-DISEASE ADMINISTRATION IN HOLLAND AND DENMARK.

In travelling by rail from Amsterdam to Wageningen, the headquarters of the phytopathological service of Holland, one passes first through stretches of typical Dutch scenery of dyke and meadow, plentifully besprinkled with the characteristic black and white cows of the country. Later one passes into a country of Heath and Pine, and the journey is completed by steam tramway from Ede along a fine avenue with waving crops on either hand. Not far south of Wageningen, the fertile plains which lie between the Waal and the Rhine represent the principal fruit-growing country of Holland, but fruit cultivation is not generally conspicuous in the immediate neighbourhood of Wageningen.

The Dutch Phytopathological Institute, established eight years ago under the direction of Professor Ritzema-Bos, combines the functions of a research institute in plant diseases and kindred subjects with those of an agricultural college. It is also the headquarters of the service of nursery and garden inspection of which the Director is chief.

The college, which is attended by some 250 students for a course of four years, is divided into the faculties of agriculture, tropical agriculture, horticulture, forestry (including courses for the forest service of the Dutch tropical colonies), and agricultural chemistry. The extensive grounds are laid out in plots for instruction in the various forms of cultivation, and glass tropical houses are provided for teaching purposes. A large proportion of the students go out to the East Indies on the completion of the course.

In carrying out the functions of the Institute proper the Director has three scientific assistants. All branches of economic mycology and entomology receive attention. A large amount of time is occupied in the determination of specimens sent by the general public from all parts of the country. Advice is furnished gratis to all enquirers, and the correspondence of the institution is increasing by leaps and bounds. An extensive series of leaflets is published on similar lines to those of the English Board of Agriculture, and many of these incorporate the results of researches carried out at the institution. Thus the Dutch publication on American Gooseberry mildew is an extensive brochure of 33 pages, with a large coloured plate and other illustrations.

The outside work of the phytopathological service is concerned mainly with the inspection of nurseries and of nursery stock for export, and with special inspection for American Gooseberry mildew. Seven inspectors are employed in the former service and five in the latter, and there are two supernumerary inspectors. Advisory committees have been formed in the principal fruit and bulb-growing centres. Their functions include the discussion of the best means of preventing and checking plant diseases, and keeping the central office informed of the progress of pests in their particular districts. The export trade in bulbs and nursery stock is of great importance to Holland, and the necessity for a clean bill of health is fully realised. Formerly, attention was chiefly paid to nursery inspection, but this has largely been given up in favour of the inspection of consignments. The number of nurseries exporting was found to be so large that efficient inspection was impracticable. Consignments for export are examined by inspectors resident at Boskoop, Oudenbosch, Naarden and Aalsmeer, whilst an inspector resident at Wageningen has a roving commission to visit other centres as required. On the payment of certain fees certificates are issued for consignments found to be free from transmissible disease. The number of expert certificates issued in 1912 for consignments to the United States and Canada was upwards of 2,500.

My principal enquiries were naturally directed to the condition of those diseases which are chiefly exercising the attention of the English Board of Agriculture. I was relieved to find that wart disease of Potatos is so far entirely unknown in Holland. It was less satisfactory to learn that legislation is contemplated entirely prohibiting the import of Potatos into the country. This is owing to the embargo on the export of Potatos to the United States instituted last year on account of the presence of powdery scab.

The American Gooseberry mildew appears to be causing no less trouble in Holland than in England, and similar orders are in operation in both countries. The consignment of diseased fruit by rail or otherwise is prohibited, but, as in England, some difficulty is experienced in rigidly enforcing this rule. Measures for combating the disease are enforced with the assistance of the local authorities. The treatment prescribed is the removal of affected shoots before a certain date in the autumn and the turning over of the soil around the bushes. To this end notices are served by the *burgermeester* in each parish, and it is the duty of the police to see that the provisions are carried out. Although it is not supposed that the disease can be eradicated in this way, it is considered that where the measures are conscientiously applied the bulk of the crop can be saved. Over a considerable area in North Holland it is stated that the treatment has met with marked success and the extent of the disease has been materially reduced.

My holiday, begun in Holland, was continued in Denmark, and here I had the privilege of an interview with Professor Kolpin Ravn of the Agricultural College of Copenhagen. The Veterinary and Landbohöjskole (Agricultural High School) is a very large institution with upwards of 600 students. Half of these belong to the veterinary faculty. The remainder are divided between forestry, agriculture, horticulture and surveying.

Compared with that of Holland the phytopathological service of Denmark is in an embryonic condition. Its functions are at present discharged by a commission consisting of the professors of plant pathology and agricultural entomology, with some assistance from local committees. Considerable extensions are, however, looked for in the near future.

As in Holland, wart disease of Potatos is unknown. Powdery scab, on the contrary, was discovered for the first time this spring in a single locality—the island of Bornholm. The fruit industry is not as yet very extensive in Denmark, and no special legislation exists in the case of American Gooseberry mildew, which is apparently present wherever this fruit is grown. I saw the winter stage early in July on a few bushes in a small garden by the seaside near Elsinore.

As regards the treatment of the mildew, autumn pruning and turning over the soil are recommended, but Professor Ravn is also a strong believer in winter spraying. For this purpose is recommended either a 4 per cent. solution of copper sulphate or lime sulphur wash at 1 in 10 of the commercial strength. We were told that very marked differences had been observed as the result of winter spraying in the condition of adjoining gardens otherwise similarly treated.

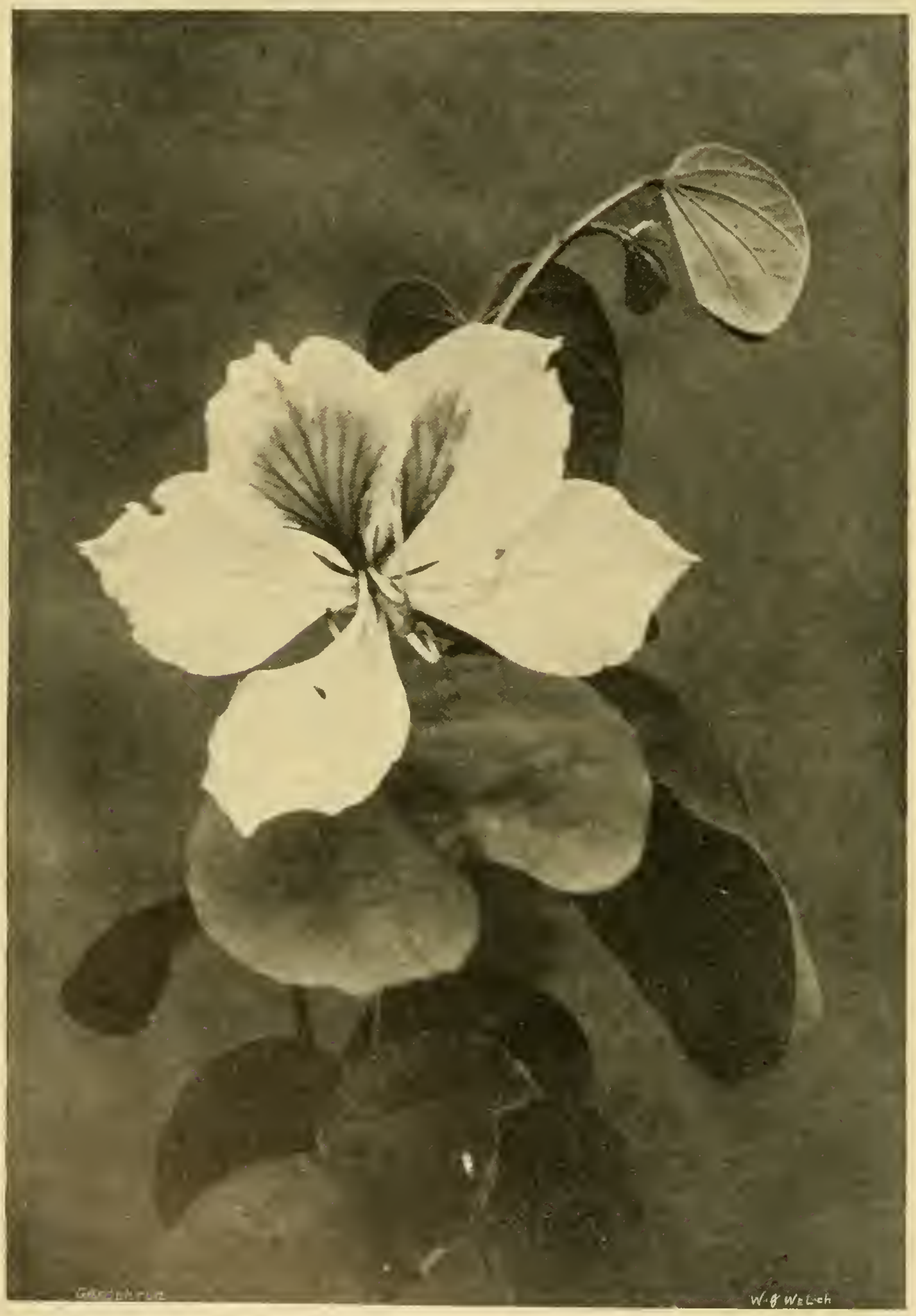
Both in Holland and in Denmark, as in England, this year seems to have been marked by an exceptionally severe attack upon the fruit. *R. H. L.*

TREES AND SHRUBS.

PYRUS FLORIBUNDA.

Doubts have often been expressed by competent authorities whether this plant should be classed as a true species, and if the test of a species is its ability to reproduce itself true from seed then this Pyrus is probably a form of the Siberian Crab (P. baccata), or it is of hybrid origin, as it does not come true from seed. Some eight years or nine years ago I gathered fruits from a large tree here, and the seeds were sown the following spring, practically every one germinating. I may mention that no other Pyrus of any description was growing within two hundred yards of the tree I obtained the seeds from, so that the possibility of hybridisation having been effected was very slight. The young plants have been kept growing, and, though some have flowered before, this has been the first season that all have bloomed, and I have been able to form an opinion of what they are, and their garden value.

Out of about 300 plants not one resembles P. floribunda in foliage or habit, though four have a slight resemblance in size and colour of flower. The majority are practically P. baccata with slight variations in shape and size of leaf, and in the colour of the blooms, which vary from nearly white to a deep-pink colour. Five plants had semi-double flowers somewhat resembling P. spectabilis, though differing in habit and foliage from that species. The only one that is of any value is a plant closely resembling the Siberian Crab in habit and foliage, but bearing large trusses of bright-red flowers, which are freely produced and rather showy. The fruits are like those of P. baccata in size and shape, though a few drop the calyx of the flower in the same way that P. floribunda does. In colour they all vary from yellow to the bright-red of the Siberian Crab, but none has any distinctive ornamental value. If the distinguishing character of a species is that it reproduces itself true from seed, P. floribunda can only be a form of P. baccata, or a hybrid of which that species was one of the parents. *J. Clark, Bagshot, Surrey.*



[*Photograph by C. P. Raffill.*

Fig. 58.—Bauhinia purpurea : flowers rosy-purple shaded with white or pale yellow.

NEW OR NOTEWORTHY PLANTS.

BAUHINIA PURPUREA.

Bauhinia purpurea (fig. 58) is one of the "dwarfs" of the genus, and, unlike many of the larger species, may be induced to produce its flowers under cultivation in this country. Many species of the genus are well known in the gardens of the East on account of the beauty of their flowers, which vary in colour from white to deep crimson or maroon, and in many cases the blooms are beautifully blotched with other colours, such as yellow. The plants vary in size from small bushes to large, handsome trees up to 40 feet or more, whilst others are of climbing habit, and in the flowering season become a mass of flowers. They all appear to be constant in having twin-lobed leaves, composed of two-jointed leaflets at the top of the petiole, the lobing varying greatly in the different species, sometimes being cut down nearly to the base, and sometimes only slightly at the apex, so that the leaf is nearly entire. Although Bauhinias are beautiful objects in the Tropics there is not sufficient sunshine in this country to suit them; but B. purpurea is one of the least fastidious in this respect, and, being of dwarf, bushy habit, is more easy to manage than the larger species. A plant of B. purpurea has flowered for several years in succession in a sunny position in a stove house at Kew Gardens. The flowers are reproduced in natural size in fig. 58; they are light rosy-purple in colour, shaded with white or primrose, and borne on short, branching racemes at the ends of the current season's growths. The plant is of evergreen habit, the leaves being of a dark-green colour, variable in shape at both apex and base, and in outline are either ovate, orbicular or cordate-ovate, the lobes being either acute or obtuse at the apex and cordate or entire at the base. In size they vary from 1 to 6 inches long, and 1 to 5 inches in diameter. The plant differs considerably in colour forms, and there is a white variety. The species is a native of many parts of India, and the habitat extends into Ceylon in the south and into the tropical parts of the Himalayas on the north. *C. P. Raffill.*

WHAT IS PRIMULA ANGUSTIDENS, PAX?

I am often asked this question. The answer is—there is no such species.

Pax instituted the specific name, and gives a description of a chimaera on page 128 of his Monograph. Three distinct species are cited by him as types of his P. angustidens:—

1. The plant collected by Delavay under Nos. 214 bis, 314 bis, and diagnosed by Franchet as P. japonica, A. Gray var. angustidens.
2. The plant collected by Henry under Nos. 12,121, 12,121a, and subsequently raised by Veitch & Sons from seed collected by Wilson. This is P. Wilsonii, Dunn.
3. The plant collected by Henry under No. 12,121b, which, being a new species, I have named P. oblanceolata.

This is not the place for a discussion of the genesis of the confusion. What I am concerned with is to endeavour to aid growers of Primulas in the identification of their plants.

The first of the plants mentioned above need not trouble cultivators at present. The plant is not to my knowledge in cultivation. The other two are in cultivation, and with P. Poissonii, Franch., make a trio of forms sufficiently alike to casual observation to excuse misnaming of individual plants. When the three plants are placed together their difference can be recognised by a tyro. How are they to be recognised?

Let me say first of all that the plants belong to the section Candelabra of Primula—forms with basal aggregate of leaves more or less like those of the Primrose, from which ascend scapes bearing in tiers at varying distances whorls of stalked flowers. In the section the three plants form a group marked by an entire absence of meal—not even on the inside of the calyx (the last place upon which meal is retained by plants of the section) is there a trace of meal—and there is an absence also of hairs. Further, the leaves in the group have gland-pits upon both surfaces—pits after the fashion of those which are so distinctive in P. spectabilis of European species. The flowers have a tinge of magenta in their purple. With those general characters the plants associate the following distinctive marks:

1. P. Poissonii, Franch. Plant not aromatic. Leaves glaucous, oblong, obovate, with denticulate margin and the blade folded upwards more or less on each side of the midrib and crisped and

twisted, seldom more than 8 or 9 inches long or 2 inches broad. Flower-stalks and calyx usually glistening as if varnished, and showing red striae. Corolla limb flat on expansion, the tube red inside and out, the lobes cleft. Fruiting stalks closely adpressed to the scape; the cylindric fruit closely invested by the tubular calyx, and showing but slightly above the calyx its crowning reddish flattened lid.

2. Primula Wilsonii, Dunn. Plant most aromatic. Leaves green not glaucous, tending to recurve rather than incurve, also denticulate, rarely 8 inches long, or more than an inch and a half broad. Flower-stalk and calyx green, not varnished. Flower much smaller than in P. Poissonii. Corolla limb concave, never becoming flat, the lobes short, rounded, and not cleft, although crenulate. Fruit-stalks not so closely adpressed to scape, and the ovoid fruit projecting far from the cup-like calyx investing its base has a conical green summit.

3. Primula oblanceolata, Balf. fil. Plant like P. Poissonii, Franch. Not aromatic. Leaves glaucous, oblanceolate or strap-shaped, often more than a foot long and always narrow, about an inch broad; their surface is flat and they curve outwards from the stem. Their marginal denticules are much sharper and more rigid than in P. Poissonii, Franch., often like small prickles. The calyx is not varnished. The corolla limb is flat in expansion, larger than that of P. Poissonii, Franch., the tube white inside and out, lobes cleft. The fruit-stalks are not so rigidly adpressed as those of P. Poissonii, Franch., and the fruit is ovoid with a conical summit, and is partially enclosed by the calyx.

Cultivators who have Primulas of the P. Poissonii, Franch., type may readily determine the forms they have by the following analytical key:—

Plant aromatic, corolla limb concave. P. Wilsonii.

Plant not aromatic, corolla limb flat. Leaves long, narrow, flat, corolla tube white. P. oblanceolata.

Leaves short, broad, crisped, corolla tube red, P. Poissonii.

The figure in Pax's Monograph in the main represents P. Wilsonii, Dunn. The figure in the *Bot. Mag.*, tab. 7,216, is a good representation of P. Poissonii, Franch. Could the name P. angustidens be retained it ought to attach to the plant of Delavay's Nos. 214 bis, 314 bis, which, by its long-lobed calyx, its equally-lobed corona, forms of stamens and other characters is easily separated from P. Poissonii, Franch., and the other species referred to above. That plant, as I have said, is not in cultivation, and I shall not discuss the question of its name here. Suffice it that gardeners know there is no such plant as Primula angustidens (Franch.) Pax, and that in cultivation there is no plant to which the name P. angustidens should be attached.

I am much indebted to Messrs. Bees, Ltd., for specimens which have aided me greatly in making the identifications given above *I. Bayley Balfour, Edinburgh.*

ORCHID NOTES AND GLEANINGS.

LAELIO-CATTLEYA PENARTH.

A pretty although not showy hybrid raised between Cattleya Forbesii and Laelio-Cattleya elegans (C. Leopoldii × L. purpurata) is sent by Mr. H. Haddon, gardener to J. J. Neale, Esq., Lynwood, Park Road, Penarth, who sowed the seeds in 1909. In form the flower is nearest to C. Forbesii, and the lanceolate sepals and petals have similar pale yellowish-green colour with a slight veining and tinge of very pale rose derived from the Laelio-Cattleya. The lip, of which the separation between the side and middle lobes is clearly defined, is white, the basal area having raised red lines on a yellow ground, almost as in C. Forbesii. The front and margins of the side lobes are marked with bright mauve.

ODONTIODA STELLA (O. ELEGANS × C. NOEZLIANA).

This pretty brilliant-scarlet hybrid was flowered by the raiser, de B. Crawshay, Esq., Rosefield, Sevenoaks, in July, 1913. Hence the record of Oda. Stella (Odm. percultum × C. vulcanica) in the report of the R.H.S. meeting held on July 28 this year, shown by R. G. Thwaites, Esq., under that name, is incorrect.

Odontioda Eva May (Odm. percultum × C. vulcanica) was raised and flowered by R. G. Thwaites, Esq., Chessington, Streatham, in 1912, and the cross seems to have been inadvertently renamed. The correction in each case is now made.

MASDEVALLIA CURTIPES.

This pretty little ally of M. infracta is flowering, probably for the first time in cultivation, in Messrs. Sander and Sons' nursery, St. Albans. The flowers have the same cupped perianth as M. infracta, and are coloured rosy-purple, with yellowish tips to the segment, but very much shorter scapes. The plant is very profuse in flowering, and when Masdevallias were more valued than they now are would have been considered an acquisition. The quaintness of form and variety of colour seen in the genus Masdevallia should cause a revival in its favour.

MARKET-GARDENING IN THE MANCHESTER DISTRICT.

It may appear paradoxical to associate the gloomy, dull, smoky atmosphere of Manchester with the bright, vivid colours of flowers, yet within 6 to 8 miles from the Town Hall of this great industrial centre acres of flowers are cultivated for market, principally at Sale, Northenden and Baguley. Starting from the terminus of the tramway at Sale on the stretch of road to Baguley Sanatorium (belonging to the Manchester Corporation), an impression is produced that one is not likely to forget; it rivals that produced by such seed-growing centres as Tiptree, Kelvedon and Coggeshall.

The ground is monotonously flat; the soil is exceedingly light, except towards the south of Baguley, where it has a tendency to be heavier in texture. The land is divided into small holdings, varying from ½ to 8 acres, and is largely devoted to the cultivation of plants for cut blooms, of which there is a constant supply from April till the end of October.

The number of glasshouses is limited except in the largest establishments, the chief substitutes consisting of "lights" 4 feet 6 inches by 6 feet, used in the spring for rearing seedlings or rooting cuttings, and during the summer and autumn to shelter plants in bloom against what is known locally as "black rain," which comes from the direction of Manchester.

All varieties of plants are grown—bulbous, perennial and annual. Earliness is not aimed at; in fact, one might think growers wait till other districts have sent the bulk of their produce, but once the local crops are ready, outsiders have little chance, especially as the local cultivators dispose of their produce themselves in Shudehill Market.

The first blooms available are Daffodils, such as Narcissus Horsefieldii and Sir Watkin, and dark-red Wallflowers, which are largely cultivated, though the young plants suffer during times of heavy frost, which seems to disintegrate the surface of the ground and to injure the roots. Pyrethrums from the middle of May till frosts occur form an important section, Mont Blanc and James Kelway being favourite varieties. Chrysanthemum maximum receives great attention; often an acre is devoted to its culture in the larger gardens. Every grower seems to possess a variety of his own, and looks for blooms with a stiff perianth and small centre.

Spanish Iris, chiefly yellow and white varieties, and Gladioli The Bride and Peach Blossom are well represented, but the corms require lifting every two years or the colour of the bloom seems to lose its brightness. Stocks, white, purple and pink Perfection; Asters Queen of the Market, white, pink, red and blue; these, together with Comet and single Asters in small quantity, are the main summer crops, and form a most attractive sight. The plants are grown in beds 40 to 60 feet in length, neatly bordered with one row of Beetroot, which is set to keep the path straight, to receive the drip when the lights are placed as cover, and to prevent the splashing of mud by the rain on the blooms. Coreopsis, Gaillardia grandiflora, Chrysanthemum maximum Morning Star, and Marigold (African) Prince of Orange are cultivated in several establishments. Border Carnations are also grown by a few and will be planted more freely in future. Sweet Peas and Dahlias are considered the monopoly of a few gardeners, who well deserve the reputation they have gained in these specialities.

Chrysanthemums close the season, the varieties Wells' White, Horace Martin, and a small proportion of Mme. Marie Massé being exclusively grown. Market White was a great favourite a few years ago, but has been given up owing to the bad keeping quality of the cut blooms.

Gypsophila elegans and Rhodanthe, pink and white, are to be met with in every holding and are in bloom from early in May until destroyed by frosts. Asparagus officinalis is grown for decorative purposes and cut from the second year after planting, though three-year-old crowns are the most productive.

Vegetables.

The cultivation of vegetables has been practised for several generations, and these were until a few years ago the only crops of these market gardeners. The acreage devoted to vegetables is still larger than that for flowers, and is spread over a greater area, which embraces Timperley, Ashton-on-Mersey, Carrington and Flixton, all within an 8 miles radius of Manchester.

The gardens vary in size between 4 to 10 acres. Many farmers have several acres broken up for the purpose, much to the dissatisfaction of the other growers, who consider it as unfair competition owing to the lower rent of farming land and the advantage farmers have in being able to spread the rotation of crops over a bigger acreage.

Though such holdings may not attract so much attention as those devoted to flowers, they claim the interest of gardeners as examples of complete mastery of the craft, resulting in evenness and uniformity of crops, and the good health of all plants under cultivation.

The crops may be placed in two classes (a) intercrops, (b) main crops. The former are all marketed before July so as to leave the whole of the ground to Brussels Sprouts, Horse-radish, Cauliflower and Celery. Onions, Strawberries, Beans, Sage, Mint and Thyme are always grown by themselves, and many acres are devoted to the culture of herbs.

The great local specialities are Brussels Sprouts and Celery, which are very noticeable for the purity of the strains, mostly peculiar to the grower. Brussels Sprouts are always sown direct in the ground in March to lessen a tendency to the blowing of the buds. White or red Celery is planted about May 20, in rows 4 feet apart, and earthed up from early in September. When marketed from October it is very common to see heads of Celery 4 feet in length.

Horse-radish is extensively grown. It is lifted and replanted every year in very heavily manured ground. The "set" is made as long as possible, as Horse-radish roots develop in thickness but not in length.

The varieties of Cauliflowers may be suitable to the ground, but they are rather late and the inflorescence is not very close in texture.

Onions form the staple market crop after Christmas; the bulbs are only of medium size owing to close sowing in March. When ripe they are tied in bundles, which are hung on the walls of all available buildings to dry, and the strings present an interesting feature right through the winter months. This method of keeping Onions is excellent, as shown by the results.

Strawberries are not grown on a large scale, as was formerly the case, but the MacMahon variety, late in blooming and ripening, is of great utility for this locality, both for growing and marketing purposes.

Rhubarb, chiefly of the varieties Prince Albert and Victoria, is seen in all the market gardens, and prices are always high for crowns sold by auction. Many growers force Rhubarb from the middle of November in greenhouses. The crowns are kept dark by flimsy staging, constructed to hold 1 or 2 inches of soil, and used for forcing Mint at the same time.

Peas may be considered a remunerative crop at the price obtained, and it is remarkable that more are not cultivated. But it is essential to train them on sticks, and the engagement of casual labour for picking may also add to the difficulty of adopting it as an important crop.

Leeks and Beetroot close the main crops of the year; these vegetables show the excellence of work so noticeable even in the odd corners generally left for these two crops.

Radishes, Cos and Cabbage Lettuces, Parsley, and Onion White Lisbon are sown and planted as intercrops among such vegetables as Brussels Sprouts, Horse-radishes and Cauliflowers, and are the main source of income from April until July.

The packing, bunching and grading is done by women, and practically all vegetables are washed and sent to market scrupulously clean.

The main operations in the gardens are done with horse implements, and even seeds are sown with the aid of machines. Though weeds such as Chickweed and Groundsel are very common, and labour is scarce owing to the big demand in the numerous industries in the neighbourhood, the holdings are, as a rule, kept very clean, and only main paths, often only headlands, are to be seen.

On three nights a week the produce is sent to market in large lorries, to return with loads of manure, which is freely used at the rate of 40 to 50 tons per acre. Very little chemical manure is employed, but every year gas lime is added to the ground, which, owing to its nature, would otherwise soon become sour with such a quantity of manure.

The growers sell their own produce at Shudehill and obtain fair returns, which may be attributed to their shrewd knowledge of the public requirements, to their crops being arranged so as not to clash with those imported, and to a high standard of quality.

In these days of amalgamation it is to be wondered why they do not follow the example of the great concerns of Manchester and of the Farmers' Association of Cheshire by forming a co-operative society, which would certainly increase their buying and selling power and eliminate losses which an isolated individual cannot well avoid. *P. Aquatias.*

NOTES ON FRENCH HORTICULTURE.

THE INTRODUCTION INTO FRANCE OF AESCULUS HIPPOCASTANUM.

M. GIBAULT, the learned librarian of the French National Society of Horticulture, has recently published an interesting note* on the introduction of the Marronier d'Inde (Horse Chestnut) into France, which introduction celebrates its third centenary during the coming year. The tree is indigenous in Greece and in the Balkan regions, but was not known in antiquity nor in the Middle Ages. It passed into Italy about the middle of the 16th century, and Charles de l'Escluse sowed it in 1576 in Vienna, using seed which came from Constantinople. He named the tree Castanea equina (Horse Chestnut) because the Turks employed the ground seed in veterinary medicine. This tree was brought to France in 1615 by one named Bachelier, a great amateur of plants, on his return from a journey in the East. It was planted in Bachelier's garden in Paris in the Quartier du Temple, and the investigations of M. Gibault establish that this specimen was the ancestor of all those grown subsequently in France. The term of the popular French name, "d'Inde," applies in a general way to any Eastern country.

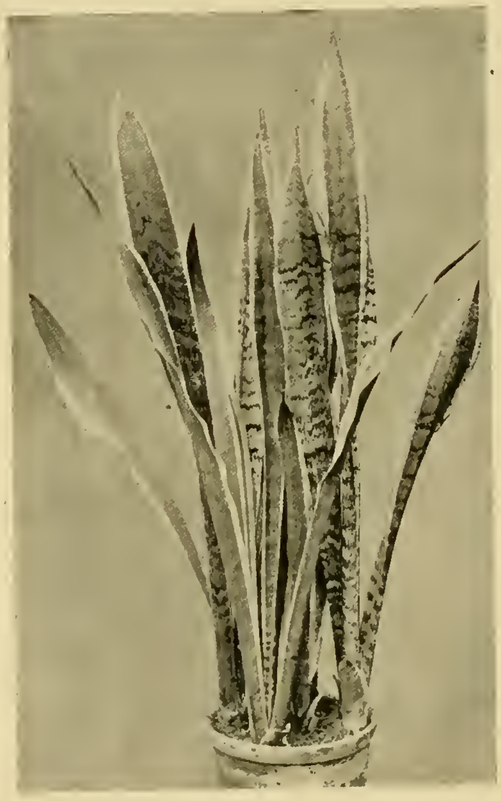


FIG. 59.—SANSEVIERIA LAURENTII.

SANSEVIERIA LAURENTII.

AN extremely interesting observation on the variegation of the leaves of Sansevieria Laurentii has been recorded by M. Gérome, head gardener to the Museum of Natural History, Paris. This species, brought from the Congo by Professor E. Laurent, and described by Willdeman (*Mission Emile Laurent*, p. 45), differs from S. guineensis only by the yellow variegation at the edges of the leaves (see fig. 59).

As is well known, the Sansevierias are propagated readily from fragments of their leaves. When S. Laurentii is propagated by division of the stems the variegation remains constant in the young plants, but when it is reproduced by leaf cuttings the variegation disappears and the young plants have all the characters of Sansevieria guineensis. The explanation which these facts suggest is that the adventitious buds produced on the leaf cutting arise from different groups of cells from those which produce normal buds; and that all the tissues of the bud from a leaf cutting are organised from normal cells, whereas of the tissues of a normal bud some arise from the layers of variegated cells and reproduce their peculiarity. *A. Meunissier.*

FOREIGN CORRESPONDENCE.

GRASS IN THE ROCKERY.

I DO not see the force of Mr. N. Gardner's objection to grass being introduced into the rock garden (see p. 457, vol. LV.), which I take to mean a plot of considerable extent laid out as an Alpine garden; but in the small pile of stone usually termed a "rockery," grass plots would certainly be out of place.

In the new Royal Botanical Gardens at Munich it is clearly demonstrated that good-sized grass plots in large rock gardens afford resting places for the eye between blotches of gaudy colours. This alpine garden was formed on a mass of gravel, and is of large dimensions, some 800 to 1,000 tons of rock having been employed in its construction, but at present (although it may be said in excuse that it is only two years old) there is much room for improvement in the method of planting, and I am of opinion that some plots of grass judiciously placed would be the very thing to effect it. On such grass plots Gentiana verna could be grown in the most natural manner and with the same glorious effect as in their upland homes. Planting this Gentian by itself and top-dressing it three or four times a year produce glaring patches of colour, but the plants lack the fascinating beauty they possess when among grass. As to how a grass-sward suitable for the purpose might be formed it may be useful to consider that Gentiana verna grows in this (not Alpine) neighbourhood exclusively on uncultivated, primitive land, thinly furnished with grass. As soon as such land is manured to make a meadow, the Gentian disappears, and in the second year scarcely a flower is to be seen. The deduction from this would seem to be that the growth of the Gentian is not able to cope with the closer grassy bottom, by which it is choked. I doubt, therefore, whether Mr. Wood's opinion is correct, that a close "swath" might be a suitable medium to grow the Gentian in, but no less do I feel convinced that Mr. Gardner's suggestion to grow it among Thymus Serpyllum would soon prove fallacious, for surely his own fear of this plant possibly overgrowing the Gentian would only too soon become a reality. Dwarf varieties of grass, as Mr. Wood suggests, as a rule form a conglomeration of close, hard tufts against which the Gentian is unable to fight. Agrostis alpina, for instance, I have myself tried and proved a failure. My proposal for a way out of the difficulty is to prepare in the rock garden plots formed of some hungry (chalky?) soil and thereon to sow thinly grasses of moderate growth (avoiding rigidly growing kinds), at the same time mixing the Gentian seed with the grass seeds. Such grass need not be cut before the beginning of June, by which time the Gentian will have finished flowering, and when cutting the grass there need be no fear of injuring the Gentian tufts, for these scarcely project half an inch above ground. If afterwards fresh seeds of Gentian be scattered every autumn there will soon be a blue lawn in spring. I have practised sowing Gentiana verna on a very poor lawn every autumn for the past four or five years. At first there appeared a few flowers, last year I counted 28 flowering plants, and this spring there were 114 tufts in flower, while the whole of the lawn is studded with seedlings. Last autumn I again sowed one ounce of seeds, which means many thousands of grains, so I hope to have my blue lawn by and by. Up to now (June 28) I have again gathered 1½ ounce of seeds, and hope to get some more before the grass is cut. Primula farinosa requires much more moisture than Gentiana verna, and I should prefer sowing it together with Pinguicula vulgaris and P. alpina, which flower at the same time on wet soil. With continued annual sowings of the Primula it does not matter much if some of the older plants perish now and then, for there will always be young ones to fill their places. Some years ago I found a plant of P. farinosa of a tender mauve colour, and have increased it from seed (quite 80 per cent. coming true). It is a gem and charming to look at. *E. Heinrich, Planegg, bei München.*

---

* *Bulletin de la Société historique et archéologique du 6e arrondissement de Paris.* April, 1914.

NOTICES OF BOOKS.

Impurities of Agricultural Seed.*

The most useful part of this book, pp. 31-95, consists of descriptions and photographic illustrations of the chief weed-seeds. The descriptions are concise and clear, and the photographs are good. A key is provided for the identification of the seeds described, and although it is perhaps susceptible of simplification, the key should nevertheless be very useful to the farmer or gardener who lacks botanical knowledge.

Flora of Malayan Peninsula.

The twenty-fourth part of "Materials for a Flora of the Malayan Peninsula," commenced by the late Sir George King and continued by Mr. J. Sykes Gamble, C.I.E., F.R.S., has appeared.† It contains the Nepenthaceae (by Professor J. M. Macfarlane), the Piperaceae (by Dr. C. de Candolle), and the Proteaceae and Loranthaceae by Mr. Gamble himself. Ten species of Nepenthes are described, though none for the first time. These include N. albomarginata, N. sanguinea, N. Macfarlanei, N. Rafflesiana and N. gracilis. No mention is made of natural hybrids; yet one might suspect the existence of some, considering how readily artificial hybrids are obtained in cultivation. But in another place Professor Macfarlane has expressed his opinion that N. Harryana is a natural hybrid between N. villosa and N. Edwardsiana; and N. cicuta between N. Northiana and N. albo-marginata. Of the genus Piper, Dr. de Candolle describes seventy-one species, mostly endemic. A few, including P. umbellatum, have a relatively wide range. This species has a very wide range in India, Malay Archipelago, tropical Africa and America. Helicia, the only genus of Proteaceae, is credited with nine species—five of recent discovery. Helicia extends to temperate regions in Japan and Khasia, otherwise its range is similar to that of Roupala in America. Mr. Gamble retains several of Blume's genera of Loranthaceae, making six altogether within his area. *W. B. H.*

ECHINOPSIS MULTIPLEX.

Echinopsis multiplex is a good subject for a very hot corner of the garden, and if given the protection of a roof-glass from November to March will usually survive the winter. The plant itself is globular in shape, about 5 inches in diameter, and the one illustrated has thirteen rib-like segments, suggesting those of an orange. The whole is of a soft sage-green colour, and the apex of each rib bears six to seven brown velvet-like tufts of down, from which spring the numerous spines and, from certain of them, the flowers.

These blossoms, as the illustration shows, are very handsome, rising in a gradually expanding tube, which culminates in a triple row of petals, supported by the narrower sepals. The outside of the tube is of a cinnamon-brown colour and heavily "felted"

The colour of the flowers is a soft rosy-pink, while the interior is provided with an immense number of stamens, close against, if not actually adhering to, the petals. Both these and the much-divided stigma are of a rich yellow tone.

As with many other succulent plants, the flowers are of very short duration.

Those shown in fig. 60 opened about eleven o'clock in the evening. Realising that my opportunities to photograph them would in all probability be short, I did the work soon after six a.m. the following morning, and a close inspection will show dewdrops still upon them. By nine a.m. the flowers had begun to fade, and by eleven o'clock were quite over. In the hope of securing seed I carefully hand-pollinated the blossoms, but though the downy fruits at the base of the tubes increased in size for some time they eventually fell off. The flowers themselves are 7 to 8 inches in length, and when open 3½ inches in diameter.

It seems probable that the immense quantity of pollen which they produce is to insure fertilisation within the short period during which the stigma is receptive, and night-flying moths are probably the agents in its distribution. *Reginald A. Malby.*

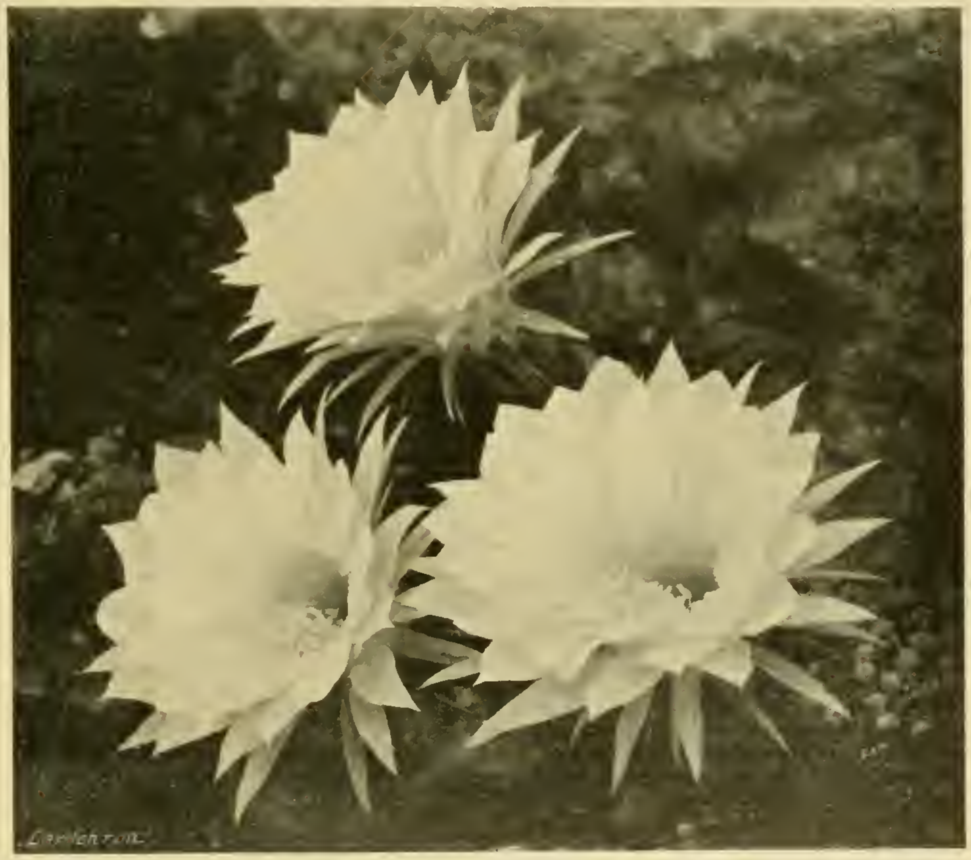


Fig. 60.—Echinopsis multiplex; flowers rosy- pink.

HIPPEASTRUMS.

(See Supplementary Illustration.)

It is interesting to trace the history of the various species and varieties of Hippeastrums, or Amaryllis as they are still generally called in gardens, which are the progenitors of greenhouse varieties. Hippeastrum Reginae seems to have been the first species cultivated in this country, and plants flowered here for the first time in 1728. H. reticulatum was introduced in 1777, H. vittatum and H. equestre in 1788. These four species were the first used for hybridisation, and the influence of at least two of them can still be traced in some of the present-day varieties. The long bands of colour on the segments of some of the flowers are derived from H. vittatum, while the parentage of H. reticulatum is seen in veined and reticulated flowers. H. aulicum with its variety platypetalum, and H. psittacinum, have also taken a part in the evolution of garden forms. In 1866 Messrs. James Veitch and Sons, through their collector Pearce, introduced H. pardinum, and in 1868 H. Leopoldii, both of which have short tubes and broad flower segments—desirable qualities from the breeder's point of view.

The Leopoldii hybrids, crossed with de Graaff's hybrid Empress of India, resulted in an increased number of flowers on each scape, and also produced many new shades and tints.

The efforts of hybridisers have always been directed towards the improvement of the form of the flower, as well as the production of a wider range of colour; their early efforts were also directed towards the elimination of the tube and the green centre of the flower, as well as broadening the petals, especially the posterior one, which in the species is generally narrow and strap-like. As a result of these efforts some flowers are nearly round, and these approach most nearly to the florist's ideal; moreover, in many varieties there is no green colouring, the ground colour extending to the base of the segments. There are varieties ranging from white to rose, through all the varying shades of salmon-red, scarlet and crimson, to crimson-maroon. The more recent novelties have white and rose-coloured flowers. Of the latter colour is the beautiful variety Daphne, in Sir George Holford's collection, which forms the subject of the Supplementary Illustration.

Hippeastrums may be increased by means of seeds and offsets; the latter method is employed to perpetuate varieties, but seeds are the best means of increase, and are produced very freely. Care, however, is necessary in hybridising, as a good strain may be spoiled by indis-

---

[*] *Impurities of Agricultural Seed, with a description of Commonly Occurring Weed-Seeds, and a Guide to Their Identification.* By S. T. Parkinson, B.Sc., and G. Smith, B.Sc. Agric. Pp. 105, with 152 photographs. Hedley Bros., Bishopsgate, E.C. 3s. net.

[†] *Journal and Proceedings of the Asiatic Society of Bengal,* Vol. LXXV., pp. 271-391, 1914.

criminate crossing; thus good crimsons should be mated with good crimsons, and the same holds good with other colours. As soon as the seed is ripe, it should be sown in pots or pans filled with light, sandy soil, the pans plunged in bottom heat with an atmospheric temperature of 65° to 70°. The seedlings should be pricked off into pans or boxes filled with light, rich soil, and later they should be placed singly in small pots, which should be plunged in a mild bottom heat, and the plants grown in a temperature of 60° to 70°. The atmosphere should be kept moist. When the plants have filled their pots with roots they should be shifted into larger receptacles, but the pots should not be larger than will just accommodate them, and should never exceed 5 or 6 inches in diameter. If well grown, a goodly proportion of the seedlings should flower at the end of two years. In the autumn and winter the bulbs should rest for a period and grow in a lower temperature than hitherto. After attaining to flowering size they should rest each year after they have completed their growth, water being withheld and the temperature reduced. Where large quantities are grown and suitable conditions are available, the seedlings, instead of being grown in pots, may be planted out in beds on a staging with bottom heat. At the end of two years the plants should be lifted and potted, when a large proportion of them should flower. The potting or re-potting of Hippeastrums, and subsequent watering, should be done with great care, for if from any cause the bulbs become weakened, they fall an easy prey to bulb mite, which is always more or less present in collections. When in flower the plants may be removed to a warm conservatory or greenhouse. Specimens in full growth with plenty of healthy roots need ample supplies of water, and should be fed with weak liquid manure or soot water twice a week.

When growth is completed, gradually withhold water, remove the plants from the bed in which they are plunged to a cooler house, and expose them fully to the sunshine. The earliest plants may be started in time for them to complete their growth early in August, when they should be removed to a cold frame. At this stage water should be withheld gradually and the plants exposed to full sunshine. If afforded a good rest they will flower at Christmas. Plants intended for flowering early should not be repotted when starting them.

The successful cultivation of Hippeastrums presents few difficulties. Certain insects attack them, but this is generally the result of neglect or improper management. Red spider and thrips may be combated by syringing and fumigation. Mealy bug and bulb-mite are more dangerous enemies; the former may be destroyed by sponging or brushing the leaves with an insecticide. Bulb-mite requires prompt and drastic measures; infested plants should be shaken out, all loose scales and decayed roots removed, and the bulbs washed in a suitable insecticide, afterwards standing head downwards to drain. Before repotting the bulbs they should be dusted with powdered charcoal, lime, and flowers of sulphur. The house also should be cleansed thoroughly, the old plunging materials removed and destroyed, and the walls well scrubbed and afterwards sprayed with a strong solution of carbolic acid. I have found these methods effective for destroying mite, but, as already stated, it is usually only present as the result of faulty cultivation. *J. Coutts.*

Publications Received.—*Plant Life in the British Isles*, Vol. II. By A. R. Horwood, F.L.S. (J. and A. Churchill, 7, Great Marlborough Street.) 6s. 6d. net.—*British Rainfall, 1913.* Compiled under the direction of Hugh Robert Mill. (Edward Stanford, Ltd., 12, Long Acre, W.C.) 10s. net.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

The Cool-House.—No general rule can be laid down as to the best season for repotting operations in the cool-house, as the plants are widely different, and the time for potting must be governed by the condition of growth. Certain Odontoglossums, for instance, produce their flowers during the spring and early summer, and in their cases the new pseudo-bulbs have commenced to develop and roots are forming. This is the best stage at which to repot the plants, for the new roots become quickly established in the fresh compost, so that the plant receives but little check from the disturbance. In the north considerable rain has fallen recently, so that the atmosphere is humid and the conditions favourable for the work of repotting. In districts where the weather is still hot and dry it is advisable to delay repotting until more favourable conditions prevail. Excepting that the roots may grow long, necessitating extra care in shifting, the plants will take no harm if their repotting is delayed even until the middle of September. Before repotting the plants, examine them carefully to see that the young growths are free from thrips. If any insects are detected, dip the plants in a suitable specific, and afterwards place the pots on their sides, so that the moisture may drain from the leaves and leaf-axils. Plants grown in small pots need to be repotted annually, but specimens in pots 5 inches and upwards in diameter need not be disturbed provided the roots have sufficient room and the compost is in a good condition. Plants to be repotted should be carefully turned out of their pots, and the decayed potting compost and dead matter among the leafless pseudo-bulbs removed. Where there are numbers of leafless stems the bulk should be removed at the time of potting, as they are of little use, possessing no roots, and serve to retard rather than assist growth. It is a good practice to divide the rhizome between the pseudo-bulbs some weeks before the work of potting is done; by this means new growths are often formed from the base of some of these pseudo-bulbs, and may be used to increase the stock or the size of a specimen plant if desired. The pots should be drained carefully, placing a few crocks at the base and filling the receptacle to about half its depth with chopped, dried bracken roots. The compost should consist of two-thirds good fibrous peat and one-third chopped Oak or Beech leaves and Sphagnum-moss, with sand and broken crocks or charcoal intermixed. The compost should be pressed firmly about the bases of the plants, and arranged in the form of a mound in the centre. Soak the materials thoroughly with rainwater and shade the plants from bright sunlight until the roots are re-established. Spray or syringe the plants overhead daily whenever the outside conditions are favourable, and maintain a humid atmosphere at all times.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Propagating Pelargoniums for Bedding.—It is a good plan to take the cuttings from plants in the reserve garden, and to dibble the shoots thinly apart in the open ground in sandy soil, where they may remain a month or so until well callused. They may then be taken up and potted in 60-sized pots, in fresh, sweet soil. Plants struck in this manner winter well; a large number of these small pots can be placed in greenhouses on shelves near to the roof-glass, thus economising space. In the spring they should be shifted into 6-inch pots, and when the time for bedding out arrives they will be suitable for any purpose, especially for furnishing stone vases. This method is better than that of rooting the cuttings in large flat boxes, in which the soil is apt to become sour, and the plant boxes cannot be placed so near the roof-glass. Moreover, the plants are apt to become drawn, and damp off. For furnishing stone vases the old variety Madame Crousse, of the Ivy-leaf section, can be grown, as it flowers profusely and is a lovely shade of pink; another popular variety is Galilee, a deeper shade of pink and with semi-double flowers.

Other Bedding Plants.—Calceolarias, Heliotropiums, Ageratums, Salvias, Marguerites, Verbenas, and Lobelias grown especially for furnishing cuttings should have their flower-spikes removed. This will result in the development of plenty of healthy, vigorous shoots suitable for making cuttings to be inserted at the end of September.

The "Wild" Garden.—Many plants in the "wild" garden are at their best, and among those flowering well are Tritoma uvaria, including the newer varieties, with brilliant spear-like inflorescences of scarlet; Hydrangea arborescens grandiflora, H. paniculata; Tamarisk hispida with its long, feathery plumes; Rudbeckia Newmanii, and Genista tinctonia, the Dyer's Weed. In valleys and damp places there are in bloom Lythrum salicifolium purpureum, which always forms a gorgeous mass; Spiraea Davidiana, S. Reevesianum, and S. ulmaria splendens; whilst on dry banks Epilobium, Senecio, Scabiosa caucasica, Helenium and Helianthus are in full beauty. Spiraea Anthony Waterer is a very fine plant, and on the water's edge masses of the purple Primula capitata are effective.

Dahlias.—Attend closely to the staking of these plants, for the light stakes placed when the plants were small are not sufficient in times of heavy rain and high winds and storms. See that the plants are all properly labelled, and weed out those that have "sported" or deteriorated in size or colour of flower.

Roses.—Mildew has become prevalent, and the foliage should be dusted, both on the under and upper sides, with dry flowers of sulphur. If the use of powdered sulphur is objected to as being unsightly, syringe the plants with liver of sulphur, 1oz. to 4 or 6 gallons of soft water, or one of the mildew specifics on the market.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Tomatos.—Remove the side growths as soon as they appear on plants carrying a full crop of fruit. Late batches of plants for early or mid-winter fruiting should be potted finally as soon as the plants are ready. Now that the days are shortening, full advantage should be taken of sun heat to maintain the plants in a growing but sturdy condition. Maintain a buoyant, sweet atmosphere, and ventilate the house during bright, sunny weather.

Pineapples.—Plants in the nursing pit should be brought into the succession house and made ready for fruiting next season. Most of them need repotting, and the bed in which they will be plunged should be prepared for their reception, placing the fresh fermenting material towards the bottom. All brickwork should be lime-washed, adding a small quantity of paraffin to the wash. This precaution is particularly necessary in the case of pits heated with hot-beds of manure, as the walls are liable to become covered with foreign growth. Afford water with great care for a fortnight after the repotting, and spray the plants overhead occasionally in bright weather. The suckers, or crowns which are already rooted should be potted and brought into the nursing pit, to be there prepared to occupy the succession pit the ensuing year. Make up the bed ready for their reception as directed for those in the succession pit. After the plants are plunged, and watered at the roots with tepid water, let them be syringed overhead, but not immoderately, as they do not require so much moisture as those further advanced in growth.

Crowns, or suckers, which were removed from the old plants and laid by at the commencement of the regulating of the fruiting pit, should be placed in frames, the beds having been previously forked up or renewed for their reception. Some of the stronger suckers may be placed at once in small pots, using a light compost. These plants must be removed with great care, or the roots may become damaged. The plants may remain in frames until the middle or end of October, when they should be removed into the nursing pit, if there be room for them without overcrowding; if not, the best and strongest may be selected for that compartment, and the weaker or less valuable ones grown all the winter in heated frames or Melon pits. In some establishments there is a special Pine pit for this purpose, in which all supernumerary and small plants can be grown with the aid of a little fire heat during the winter. The whole stock being thus disposed of, maintain a brisk heat in the nursing pits and frames in order to induce the plants to form plenty of roots. Suckers which do not possess roots should not be watered for several days after they are potted, or at least until the heat in the beds becomes pretty brisk, nor so copiously as those already furnished with roots; neither should they be sprayed overhead before the heart leaves show signs of growth. Afterwards water may be freely used at the roots, and occasionally sprinkled over the foliage. Air must not be admitted too freely until the plants commence to grow, and they should be partially shaded from bright sunlight, gradually accustoming them to more light as they become established. At a later stage, air may be admitted freely, provided the day temperature registers about 80° or 85°.

The Orchard House.—The fruit in the early house has been gathered, but the late crop of Peaches or Nectarines is only now approaching maturity, and these trees may still be syringed daily. Air should be admitted freely by both the top and side ventilators, as air in constant circulation gives better flavour and colour to the fruits, besides helping to ward off attacks of red spider. Shoots that have not been stopped, or are growing in unsuitable positions, may in the one case be shortened, and in the other removed entirely. Unless the weather becomes unusually cold or damp, fire heat will not be needed; when necessary, it should be employed with caution, and in conjunction with a free circulation of air.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Early Dessert Apples.—Early dessert Apples, such as Langley Pippin, The Gladstone, Irish Beauty, and Beauty of Bath, will soon be ready for gathering, and the trees should be examined at frequent intervals with a view to picking off any fruits that are ready, as they would be spoiled if allowed to drop. Early dessert Apples should not be kept too long, for they soon deteriorate.

Peaches and Nectarines.—These fruits will soon be ripening, and the trees should be examined each day with a view to gathering any that are ripe. Their condition may be determined by lifting them gently to see if the stalk parts easily from the stem. If it is intended to dispatch the fruits by rail or post they should be gathered before they are quite ripe. A list of the best varieties of Peaches for early cropping includes Early Alexander, Early Alfred, Early Rivers, Duchess of Cornwall, Hale's Early, and Noblesse, whilst of Nectarines, Cardinal, Early Rivers, Darwin, Lord Napier, and Elruge all ripen moderately early in the season. The fruits should be exposed to sunshine, and for this reason all lateral growths should be pinched out of the later trees, and the foliage that may be shading the fruits placed on one side.

Plums.—These trees were badly infested with aphis in the spring, but, if sprayed, they are now clear of the pest. There is an excellent crop of Plums in this district, and the fine weather has suited them, the fruits being much better flavoured when there is plenty of sunshine. The following dessert varieties will furnish a succession of ripe fruits from the end of July until the middle of August:—Denniston's Superb, Brandy Gage, Early Transparent Gage, McLaughlin, Angelina Burdett, and Oullin's Golden Gage. Good early cooking varieties include Belgium Purple, Early Orleans, Rivers' Early Prolific, The Czar, Gisbornes', and The Sultan. After the fruits have been gathered, prune the trees of superfluous shoots to allow plenty of sunlight and air to enter. Afterwards, wash the foliage thoroughly with clear water by means of the garden engine, and if insect pests are present spray with an insecticide. If the weather continues hot and dry the roots will need water. As a succession to the dessert varieties mentioned above, Brianstone Gage, Kirkes, Jefferson, and Late Transparent may be recommended, whilst for very late cropping, Reine Claude de Bavey, Golden Transparent Gage, Coe's Golden Drop and Late Orange are all suitable. Good cooking Plums to follow the early culinary varieties mentioned above are Victoria, Goliath, Pershore Plum, Pond's Seedling, Monarch, Grand Duke, Primate, and President. It may be necessary, especially in the case of the finer dessert varieties, to protect the fruit from wasps and flies by means of wasp proof netting, which can be procured from the horticultural sundriesman. Trees bearing large crops should be thinned of some of the fruits before the latter are ripe, and these surplus fruits used for tarts, etc. Trees of late varieties bearing heavy crops should be fed with concentrated manures, washing the material down to the roots with copious waterings. If the roots are allowed to become dry the fruits will cease to swell, and soon shrivel.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Gardenia.—Plants that were rooted in the spring should be potted finally, using receptacles 6in. to 7in. in diameter. Drain the pots thoroughly, and pot fairly firmly in a compost consisting of equal parts fibrous peat and rich loam, adding a little bone meal, also sand and charcoal to keep the soil sweet and open. From now onward the plants may be exposed fully to the light. Watch carefully for the presence of mealy bug, which may appear at the points of the shoots. When the pots become filled with roots, water with weak liquid manure. Syringe the plants until they flower. A temperature of 70° to 75° will be suitable until October.

Fuchsia.—It is a good plan to raise a stock of young Fuchsias each year to take the place of old and shabby specimens. Insert the cuttings now and keep them growing throughout the winter, shifting them into larger pots in the spring. Select strongly growing shoots for cuttings, and label each variety. Several cuttings may be inserted around the side of 4 inch pots filled with an open compost. Plunge the pots in an old Cucumber or Melon hotbed, cover the plants with a bell glass, and spray the foliage frequently. When rooted shift the plants into 2½ inch pots and secure each shoot to a stake. The plants may be kept on a shelf near the roof-glass.

Hard-wooded Plants.—Indian Azaleas, Camellias, Cytisus racemosa, and other hard-wooded plants of this nature that have been stood out-of-doors in sunshine to ripen their wood must receive close attention in the matters of watering, feeding and syringing. Apply the syringe with force to the foliage to keep the plants clean. Feed the roots with weak liquid manure and soot-water two or three times weekly.

Salvias require feeding from now onward. Remove all flowers and use the syringe on fine days. Plants raised from cuttings rooted late in the season should be grown in 4 inch pots. Pinch out the points of the leading shoots; the subsequent growths may be allowed to flower. The plants will be useful for forming edges to groups of other plants in house decorations.

Bouvardias, whether grown in pots or planted out in frames, need plenty of water, and occasional liquid manure, to build up strong shoots for flowering in winter. Pinch out the points of the shoots to produce shapely specimens. Plants propagated in the spring should be encouraged to grow as much as possible in plenty of warmth and moisture. The best specimens may be flowered in 5 inch pots, in which they may now be placed. As the pots become filled with roots, dust the surface once a week with Clay's Fertiliser.

Richardias planted out should be kept clear of weeds, and if the soil is dry, first water it well and then soak it with liquid manure made from sheep or deer droppings. Use a barrowful of the dung in 30 gallons of water. Richardias in pots may be shaken out at the end of the month and repotted in a rich compost composed of two parts loam, one part decayed manure, and one part coarse sand. Pot fairly firmly and stand the plants outside on a bed of ashes.

Hydrangea hortensis.—Plants that have finished flowering should be pruned, the shoots cut back to plump buds, and weak growths removed. Insert cuttings of this plant in pots and root them in a close frame.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Tomatos.—Plants in frames and cold pits with maturing fruits should be kept as dry as possible. In ordinary circumstances they will only require water at the roots at long intervals, and in northern localities they will need no moisture at all. The foliage should be reduced very considerably and no new growths permitted to develop. These precautions will enable the fruit to ripen slowly without splitting and subsequent rotting. Ventilation is of no advantage even on very warm days. In addition to seedlings, plants for cropping in spring may be raised from cuttings formed of short axillary growths. The shoots will root in a few days if the ends are placed in sand in a propagating pit. Where there is not this provision they can be placed through the drainage hole of an inverted flower-pot, the end of the shoot to rest on moist sand. By this method there is little danger of losing the plants through damping. When the plants are potted they should be watered very sparingly to induce a firm and fruitful growth.

Carrots.—The surplus plants of Carrots sown in mid-June will, if the crop has not been thinned previously, provide tender roots, and their removal will afford more space for those left to mature for storing. We are still using roots from a January sowing, the plants of which were thinned in this manner. Another sowing may be made on the chance of a late crop succeeding.

Leeks.—If it is intended to plant more Leeks the rows need not be spaced nearly so widely as for earlier batches, nor will the stems need earthing-up. For some time past Leeks from the seed-beds that were not transplanted could have been used, and any still left therein may be induced to grow freely by dressing the soil with a stimulating manure. These seedlings will grow more rapidly than the transplanted ones at this season, and will help to save the main crop from being used for some time to come.

Radishes.—A larger breadth of this salad than usual may be sown to come on slowly in succession for late use. If the soil is free from seeds of annual weeds the best plan is to sow broadcast in beds 4 feet in width, and thin the plants as they develop to prevent crowding. In weedy ground they should be sown in shallow, wide drills, so that the hoe may be employed to scarify the surfaces, and hand-weeding be reduced to the rows. The Turnip-rooted varieties are perhaps the best to sow at this late period.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 60.6.

ACTUAL TEMPERATURES:—

LONDON, *Wednesday*, August 19: Max. 72°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, August 20 (10 a.m.); Bar. 30.12; Temp. 67°. Weather—Fair.

PROVINCES, *Wednesday*, August 19: Max., 69° Weymouth; Min., 48° Harrogate.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY AND THURSDAY—

Large consignments of Dutch Bulbs in variety, by Protheroe and Morris, at 67 and 68, Cheapside, E.C., at 1 o'clock.

WEDNESDAY—

Trade Sale of Palms, Dutch Bulbs, Liliums, etc., by Protheroe and Morris, at 4.

Early Effects of the War.

The outbreak of the war called for swift decisions, not only on the part of those who had great naval and military charges, but also on the part of those able to exercise influence or authority in other directions. Our duty lay in enforcing the need of supplementing the supplies of food, and we are in a position to know that, thanks to the initiative displayed by the Royal Horticultural Society and by the Horticultural Press, much ground has been planted with crops which will serve to eke out—if need be—the food supplies of the nation. It is by no means strange that the declaration of war should have led to many curious and unexpected results, as, for example, a temporary glut in the Covent Garden market. It was not to be supposed, however, that that state of affairs should continue, although it is only too certain that, with the curtailment of purchasing power, sales must fall off. Temporary dislocation of transport has also produced serious effects, and nowhere more than in the Channel Islands. Owing to transport difficulties, now being overcome, and perhaps owing to shrinkage of available labour, due to the military system of the islands, there was a danger that the growers in the Channel Islands would suffer severe loss. We understand, however, that the Tomato crop is now being gathered with good hope of its finding a market, although the Grape-growers may not be so fortunate. The commercial fabric of our country is of such close and delicate texture that a sudden, well-meant, and in some cases inevitable economy of luxuries may throw large numbers of men out of employment. Wherefore it is a serious duty, not by any means obvious, yet nevertheless real, that people should not too swiftly change their habits. If, for example, they are accustomed to eat Grapes, let them still go on doing so, lest those who have set themselves the task of providing this food be ruined by the sudden change. Sane and steady judgment is required of all of us at the present moment. Provision of funds for destitution and distress is essential; but it is no less essential for all who have work to give out to continue to employ as many hands as they possibly can. It is right and proper for central authorities to prepare large schemes for the alleviation of distress, but the best means of securing this end in rural districts is by a detailed and individual effort on the part of those who have the means to discover directions in which local workmen can be employed as soon as they fall out of regular employment. Many examples have come to our notice in which this is being done, and we urge upon all to follow these examples.

All things point to adequate supplies of the chief food staples, but it must not be forgotten that war is an operation which is accompanied by colossal waste, and therefore, that hunger is ever the camp-follower of even victorious armies. A survey of the returns (Agricultural Statistics) published by the Board of Agriculture illustrates the kind of inevitable curtailment of imports which must ensue as a result of the war. To give but one illustration: last year we exported but a small quantity of Potatos, and imported from Germany alone no fewer than $2\frac{1}{2}$ million cwts.

It was said by a great statesman that of all the nations of Europe this country alone is able to carry on, if need be, two or even three campaigns. To be in a position in which we are able to do this requires all the steady prevision of which we are capable, and the sum of careful thought and wise action now, even in the small things which lie within the province of the individual, will not be without effect on the issue of this conflict.

R.H.S. MEETINGS.—We are informed that the fortnightly meeting fixed for Tuesday next, the 25th inst., has been abandoned, but that the meeting and Dahlia Show will be held on September 8 as arranged.

DAHLIA CONFERENCE AND EXHIBITION AT SHEPHERD'S BUSH.—We learn that the Dahlia Conference and Exhibition arranged to be held on September 2 at the White City, Shepherd's Bush, will not take place, as the buildings have been requisitioned for military purposes.

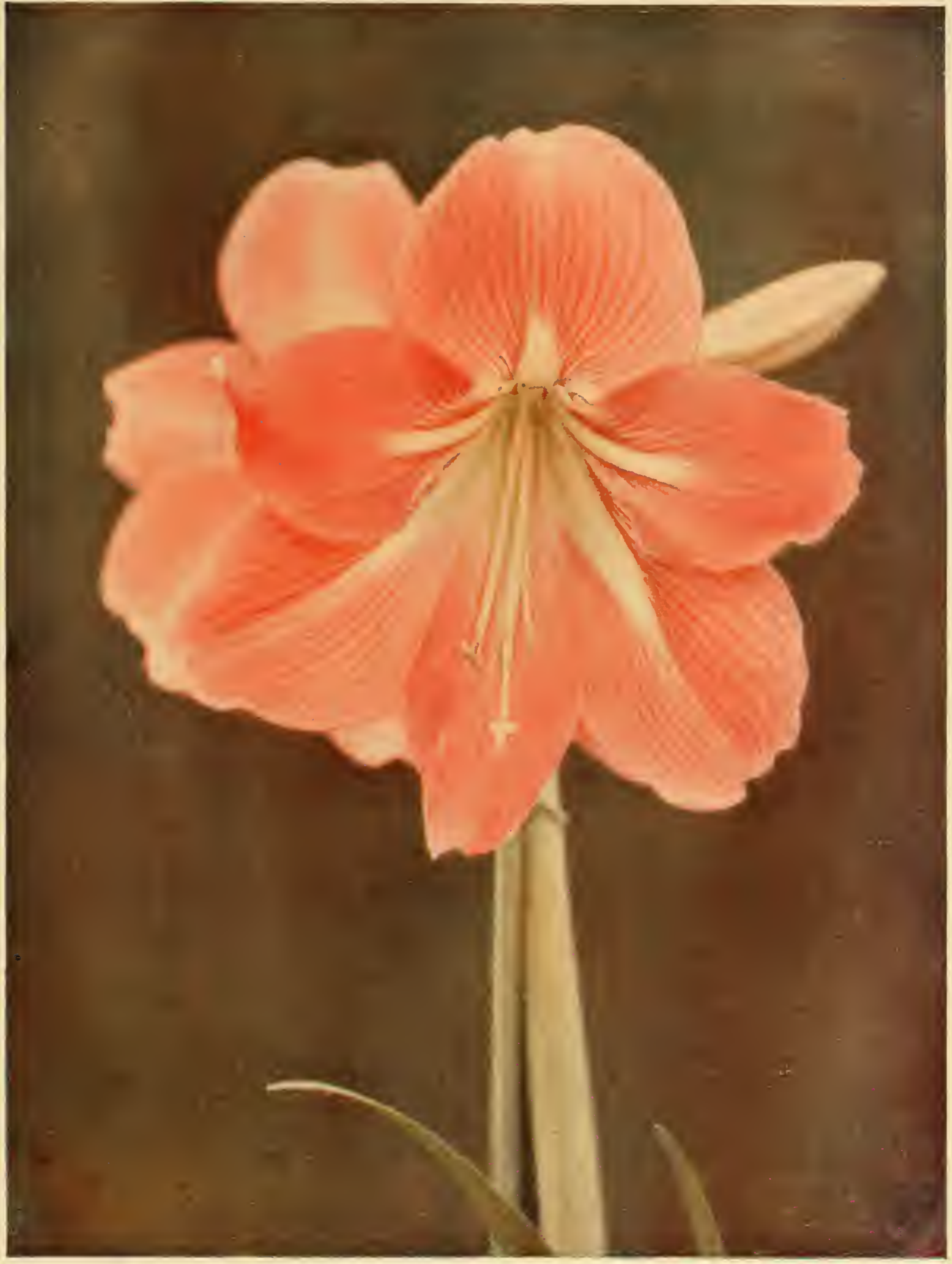
FLOWER SHOWS ABANDONED.—The Council of the Royal Caledonian Horticultural Society has cancelled the autumn show which was to have been held in Edinburgh on September 9, 10. The Glasgow and West of Scotland Horticultural Society's Show has also been abandoned for this year.

NATIONAL RELIEF FUND.—A sum of over £87 has been forwarded to the National Fund for the relief of distress arising from the war, as the result of a "Rose" day at Peterborough. The scheme originated by Messrs. W. and J. BROWN, the well-known Rose firm, offering to the Mayoress of Peterborough, Lady WINFREY, as many blooms, free of charge, as could be sold. Mr. CRANE, of Eastfield, provided a large supply of Carnations, and the sale of these flowers amounted to £6 6s. 4d. This, with £4 0s. 10d. taken at a Rose stall in Peterborough market, conducted by Messrs. BROWN, brought the grand total to £87 18s. 2d.

IMPORTS AND EXPORTS OF FRUIT, VEGETABLES, ETC.—The agricultural statistics for 1913 (Board of Agriculture) show that the value of the imports in 1913 of raw fruits and edible nuts was about $11\frac{1}{2}$ million pounds sterling—the highest on record. The value of the overseas supply of raw vegetables was also the highest on record, namely, $5\frac{1}{2}$ million pounds. The imports of Potatos amounted to about $9\frac{1}{2}$ million cwts.; of this amount Germany sent over $2\frac{1}{2}$ million cwts. Export of Potatos fell off remarkably as compared with the previous years; the values being in 1912 upwards of one million pounds sterling, and in 1913 £104,771.

A SUBSTITUTE FOR SUGAR.—Competent authorities predict that there will be a shortage of sugar, and those who know the important part which sugar plays in the diet of the people must view this possible shortage with serious apprehension. Something may be done to curtail the wasteful use of sugar in the manufacture of articles of luxury, such as fancy biscuits, pastry, iced cakes, etc., but something more than this is required, and we suggest that it should not prove impossible to produce a "cane-sugar substitute," which should have both the nutritive and gustatory qualities of the genuine article. The substitute should consist of a trace of saccharine added to glucose. As is generally known, saccharine is an intensely sweet substance, which, as we learn on the authority of Dr. ARMSTRONG, produces no ill-effects when taken in small quantities sufficient for sweetening food. Supplies of glucose are at hand, and these supplies can be augmented indefinitely by the manufacture of glucose from Potatos, rice, fruits, and so forth. Furthermore, glucose can be obtained in quantities from America. Although lacking in the sweetness of cane-sugar, glucose has the same food value. There is, however, a heavy import duty on saccharine, and Germany, the main source of supply, is no longer open to us. It is probable that the Government could undertake the manufacture of saccharine, and if this is the case, there being a plentiful supply of glucose, it should be possible to produce a cheap and efficient "sugar substitute" by the combination of saccharine and glucose.

HAMPSTEAD AMATEUR GARDENERS.—The Hampstead Garden Suburb Trust has allowed the residents on the estate to plant the ground adjoining the heath with vegetables, which will be given to London hospitals and other institutions during the period of war. These amateur gardeners include solicitors, accountants, doctors, and other professional men residing on the estate. An appeal is made for surplus plants of Kale, Savoys, Broccoli, and other winter greens, which should be sent carriage paid to Mr. J. T. Marks, 18, Corringway, Garden Suburb, Hendon.



HIPPEASTRUM "DAPHNE" (Half natural size)

(ILLUSTRATED IN "THE HORTICULTURAL RECORD," FROM SIR GEORGE HOLFORD'S COLLECTION)

Decoration for a French Horticulturist.—Monsieur L. V. P. le Clerc, horticulturist and seedsman, of Paris, has received the distinction of being created Chevalier of the Legion of Honour. M. le Clerc has been in the trade for thirty years, and is Assistant General Secretary of the French Royal Horticultural Society. He is now with the Army, in which he holds commissioned rank.

Problem of French Field Labour.—The French Minister of Agriculture has created, to begin in 1915, a system of special rewards for the mothers of families whose members remain on the land instead of forsaking the country for the town. A committee has been formed for the purpose of drawing up a working scheme.

"Revue Horticole."—The complete mobilisation of the French Army has had a disastrous effect on all ordinary activity in France, and business of all sorts is almost at a standstill. We have this week received the last issue of the *Revue Horticole* which will be published for the present, bearing an intimation to the effect that the proprietors are forced to cease publication owing to the fact that the whole staff—editors, correspondents, clerks, and printers—has been called to the front.

International Sympathy. The various horticultural societies have exchanged telegrams of mutual sympathy and good fellowship on the occasion of the lamentable outbreak of war. The Société Nationale d'Horticulture de France sent the following message to the English Royal Horticultural Society:—"The Société Nationale d'Horticulture de France addresses to English horticulturists an expression of hearty congratulation on the readiness with which England has united in fraternal action with France in defence of civilisation." The answer of the English society ran as follows:—"The President and Council render you their sincere thanks, and look forward with confidence to the success of the French, the Belgian, the Russian, and the British forces. Long live the Triple Entente! Long live France!" Similar messages also passed between the Royal Horticultural Society of France and the Minister of Agriculture in Belgium.

Food Supplies in France.—The problem of the food supply is engaging the attention of the French Government, and one of the first measures taken was to suspend (under the power conferred by the law of 1887) the tariffs on cereals and grain. Similar measures have been taken with regard to flour, Maize, Potatos, and meat. Committees are being formed in each district to regulate the supply and demand of food, and, where necessary, to buy such provisions as are calculated to be required by the inhabitants of the district and sell them, for cash, to consumers, making special provision for any who are too poor to afford to buy. It has been decided that the price of Potatos shall not rise, for the present, above Fs. 25 for 100 kilos. This decision is due to the fact that large quantities are arriving every day.

French Harvests.—The French Minister of Agriculture has lately been making close inquiries into the existing stocks and probable harvests of wheat and other corn, and the grinding capacity of the mills throughout the country. The results of this inquiry have been handed to the Minister of War, and every effort is being made to regularise supply and demand in spite of the exhaustive requirements of the Forces. One of the most important tasks of the Minister of Agriculture will be to see that the present season's harvest is duly carried; and for this purpose he has obtained from the Minister of Marine the promise of 20,000 sailors who are too old to serve in the Navy as farm hands. It is also proposed to send into their own districts factory hands who have been working in Paris and other large towns, but who came originally from the country, and to bring into use all the agricultural implements at present in stock at factories, as well as using those already at the farms. These arrangements will naturally take much time and trouble to complete, and a committee has been created by the Board of Agriculture especially to deal with these and similar problems.

Hop-Picking.—The Board of Agriculture and Fisheries, on the basis of reports received from its crop reporters, estimates that the Hop crop in Kent and neighbouring districts will be well above the average. Hop-pickers will be required as usual, and the Board understands that those who have been employed in previous years will be informed by growers either by post or through their agents of the date of picking. The usual arrangements for the conveyance of pickers by train to the large hop-picking centres will, it is expected, be made in due course.

Blairgowrie Fruit Trade and the War.—In common with other fruit-growing districts Blairgowrie is much affected by the war, and the prices of Raspberries were so low that some of the growers pulped the fruit instead of selling it at the prices prevailing, which were only £12 to £15 per ton, as compared with £40 per ton last year.

Trade in Holland.—The *Gazette de Hollande* supplies some interesting notes on the position of Dutch trade. Things are looking much brighter for, amongst others, the market gardeners of the Westland. A union of export dealers has already sent three steamships of the Harwich and Batavier lines to England with thousands of pounds of Tomatos. The Holland Railway Company had made it known at the sale at Loosduinen, near The Hague, that products may also be dispatched again to Germany. The prices of Cucumbers rose, in consequence, to ten times those obtaining on previous days. The bulb growers are to be paid lower wages, and it is proposed to destroy one-third of the crop. It is certain that the war will do much damage to this branch of industry, yet whether this will be in the same proportion as in other businesses may be doubted. If we turn to the figures for last year we find that the total export amounted to 24,960,900 kilograms. It is expected that the exportations to Great Britain, Germany, Russia, France and Belgium will be considerably smaller, yet the export to America will probably be not less than 5,000,000 kilograms—last year it was nearly 5,500,000 kgs.—and to Scandinavia and Denmark will go another 2,000,000 kgs., which with 1,000,000 added for all other countries makes an aggregate of 8,000,000 kgs. From these figures it is clear that a third of last year's total will still be exported.

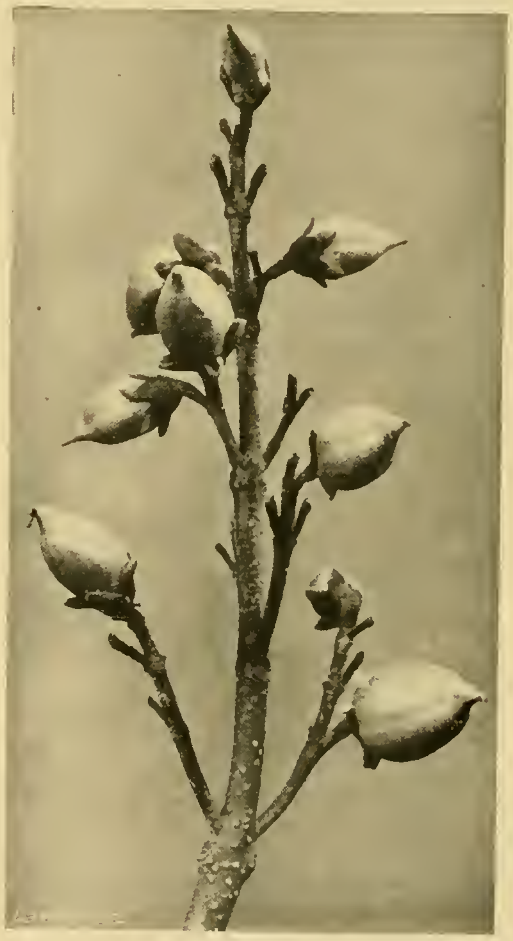
The Food Supplies.—The Board of Agriculture and Fisheries advises poultry-keepers to pay special attention to their stock at the present time. The country will be very largely dependent on home supplies of eggs during the continuation of the war. Every effort should, therefore, be made to select and retain young and healthy laying stock, and pullets and one-year-old hens should receive careful attention. Every opportunity should be given the birds to gather as much natural food as possible, and full advantage should be taken of the stubbles. On many farms the poultry at this time of the year can obtain a very large proportion of the food they require, and there is no necessity to reduce the number of really profitable birds by marketing them. The birds selected for sale should be those which are old or otherwise likely to prove unprofitable. Every poultry-keeper should make preparations for commencing hatching operations as early as circumstances permit of his doing so. Birds hatched in autumn and early winter, however, require special attention, and this must be taken into account when determining the number to be reared during the autumn and winter months. The object should be to rear as many as can be properly looked after. In providing food for poultry much that is often regarded as refuse on the farm may be profitably utilised; small Potatos, Cabbage leaves and "tailings" should be carefully conserved and used in order to obviate the use of food required for other purposes.

—— To enable working men to produce garden food during the war, the Duke of Devonshire has decided to set apart certain undeveloped land at Eastbourne, free of rent.

Potash Manures.—The Board of Agriculture and Fisheries desires to draw the attention of farmers and gardeners to the need for seeking new sources of potash manures. This country's supply of artificial potash manure comes almost entirely from Germany; the existing stock is very small, and no further importation is possible for the present. The chief natural sources of potash immediately available are (1) seaweed, and (2) weeds, prunings, hedge clippings, brushwood, leaves and vegetable refuse generally. Seaweed is already extensively used as a manure on the coasts. All who have access to this source of supply should collect it in quantity. Broad weed may be used direct as manure. Grassy weed and tangle should be dried and burnt wherever possible. A ton of fresh weed should yield 20 to 30 pounds of potash (enough, for example, to manure from a quarter to half an acre of Potatos). Inland farmers and gardeners may obtain potash by burning all kinds of vegetable refuse not suitable for direct application to the soil. The percentage of potash in vegetation varies very widely; among ordinary weeds, for example, Thistles might yield 5 per cent. and Nettles 2.5 per cent. of their weight; timber contains very little potash, cordwood a considerable quantity, and brushwood still more; ordinary wood ashes might contain from 5 per cent. to 10 per cent., according to their source. The natural variations are so great that it is not possible to state definitely the composition of the ashes resulting from the burning of the weeds, prunings, hedge-clippings, etc., but they might be expected to contain from 10 to 15 per cent. of potash, i.e., they might be worth as much as an equal weight of kainit (last spring kainit sold at about £2 10s. per ton). It is absolutely essential, in the absence of full supplies of farmyard manure, that potash should be provided for such farm crops as Potatos and (on light soils) Turnips, and that it should be available in gardens for Potatos, Carrots, Parsnips, Onions, and many other crops. In view of the lack of employment for unskilled labour in many districts farmers might well begin by collecting all readily-available vegetable refuse with the view of drying and burning it, and storing the ashes for early spring use before the winter sets in. Similarly during the winter much labour might be employed in rooting out old hedges and clearing off other coarse vegetation in itself objectionable. All these cleanings might be burnt, and the ashes used in late spring at a time when potash manures may be of great value. The ashes must be stored in a dry place. The carbonate of potash present in ashes is very soluble, and would quickly be washed out if exposed to rain. The following leaflets dealing with the uses of potash manures may be obtained post free on application to the Secretary, Board of Agriculture and Fisheries. Letters of application need not be stamped. Leaflet 80.—Use of artificial manures. Leaflet 105.—Fertilisers for market garden crops. Leaflet 254.—The use of seaweed as manure.

The Consultative Agricultural Committee.—The Committee has thought it advisable at the earliest stage of its proceedings to review the position with regard to the food stocks at present available for consumption. The Board of Agriculture, whose sources of information are of the widest character, has already issued reassuring statements on this subject, and the practical knowledge of the Committee, together with the information from official and other sources which has been freely placed at their disposal, has led them to form similar conclusions. They are of opinion, therefore, that in existing circumstances any considerable increase in the price of ordinary foodstuffs would be unjustifiable; and they would add that there is no occasion whatever for public alarm. The Committee welcomes the steps which have been taken by His Majesty's Government with a view to preventing excessive prices being charged for foodstuffs. The Committee fully realises the handicap imposed upon farmers in getting in the harvest by the depletion of skilled agricultural labour owing to the mobilisation of the Army, etc. Active steps are being taken to supply the deficiency thus created by means of special instructions issued to the Labour Exchanges. All possible use should be made of these organisations, which are making special efforts to organise a supply of suitable labour. It is also realised that the type of labour most acceptable to the farmer at this juncture will be skilled or, failing that, knowledgeable. The committee therefore confidently appeals to landowners to facilitate the employment of members of their estate staffs (such as keepers, woodmen, gardeners, etc.) upon the neighbouring farms; and to the agricultural community generally to encourage and induce all inhabitants of country villages, not of necessity otherwise employed, to lend a hand. Incidentally, the Committee has welcomed a timely offer which has been received from the Boy Scouts Association to include immediately among the list of the more important matters in which the Scouts can at the present time render themselves most useful in agricultural districts the "conveyance of messages between farmers and possible sources of labour" and other like tasks. It is hoped that this expedient may do something to overcome the practical difficulty of communication. The Boy Scouts Association is urging their local associations to encourage Scouts to assist farmers in their own neighbourhood in any way in their power. The Scouts would be entitled to receive fair remuneration for their work.

—— The following recommendations of the Agricultural Consultative Committee must in all cases be dependent upon: (1) Local conditions, and (2) the circumstances of the individual holding. But, generally, the Committee is of opinion that, in the existing circumstances, agriculturists should do all in their power to secure that the supply of home-produced foodstuffs may be in excess of the normal. In this respect the requirements of the future with regard both to cropping and to the maintenance of the fullest complement of live stock that holdings can usefully carry must be carefully borne in mind :—(1) The acreage under Wheat should be largely increased wherever practicable. In this direction it should not be forgotten that on clean land, and by the aid of suitable artificial manure, good crops of Wheat can be obtained in successive years. Attention is drawn to Section 26 of the Agricultural Holdings Act, 1908, which permits any system of cropping, subject to the holding being protected from deterioration. (2) Where Wheat cannot be grown the sowing of Winter Oats, Winter Barley, and Rye might be substituted. These crops ripen early, and allow the labour on harvest to be evenly distributed. (3) The Cabbage crop is also one to be considered where land can be spared. It provides a considerable weight of food suitable for either human or animal consumption. (4) There is much land of a certain class now under Grass which would probably pay for breaking up. If this land is scheduled as arable in the farm agreement the tenant has the option of ploughing it up. If it is scheduled as Grass the Agricultural Consultative Committee suggest co-operation between owner and occupier as to the advisability of breaking up certain fields in view of the national question of increasing home-grown foodstuffs. (5) Where a surplus of Grass or Clover exists ensilage might be made. Particulars of the best methods can be obtained from the Board of Agriculture, Leaflet No. 9. (6) The slaughter of immature or breeding stock of every description should be avoided. Where circumstances permit, the total head of live stock should be increased, particularly animals such as pigs, which multiply quickly. Ewe lambs might with advantage be put to the ram towards the end of the year. (7) While there should be no diminution in the numbers of live stock kept, the strictest economy (subject to proper conditioning) and foresight with regard to feeding is advocated. The cheapest efficient forms of food should be used, and no waste spaces capable of producing food for animals should remain uncropped. No recommendation is attempted as to the exact description of the foodstuffs to be grown, as this must depend upon the special circumstances of each case, of which generally the individual farmer will be the best judge; if in doubt he can obtain advice gratis from the recognised Agricultural College in his "Province" or from the County Agricultural Organiser. But the following crops, among others, are worthy of consideration :—Trifolium, Vetches, Rye for spring feeding, and Italian Rye Grass. By adopting such measures the more valuable foods would, so far as possible, be freed for human consumption.



[*Photograph by C. P. Raffill.*

Fig. 61.—FRUITS OF PAULOWNIA IMPERIALIS.

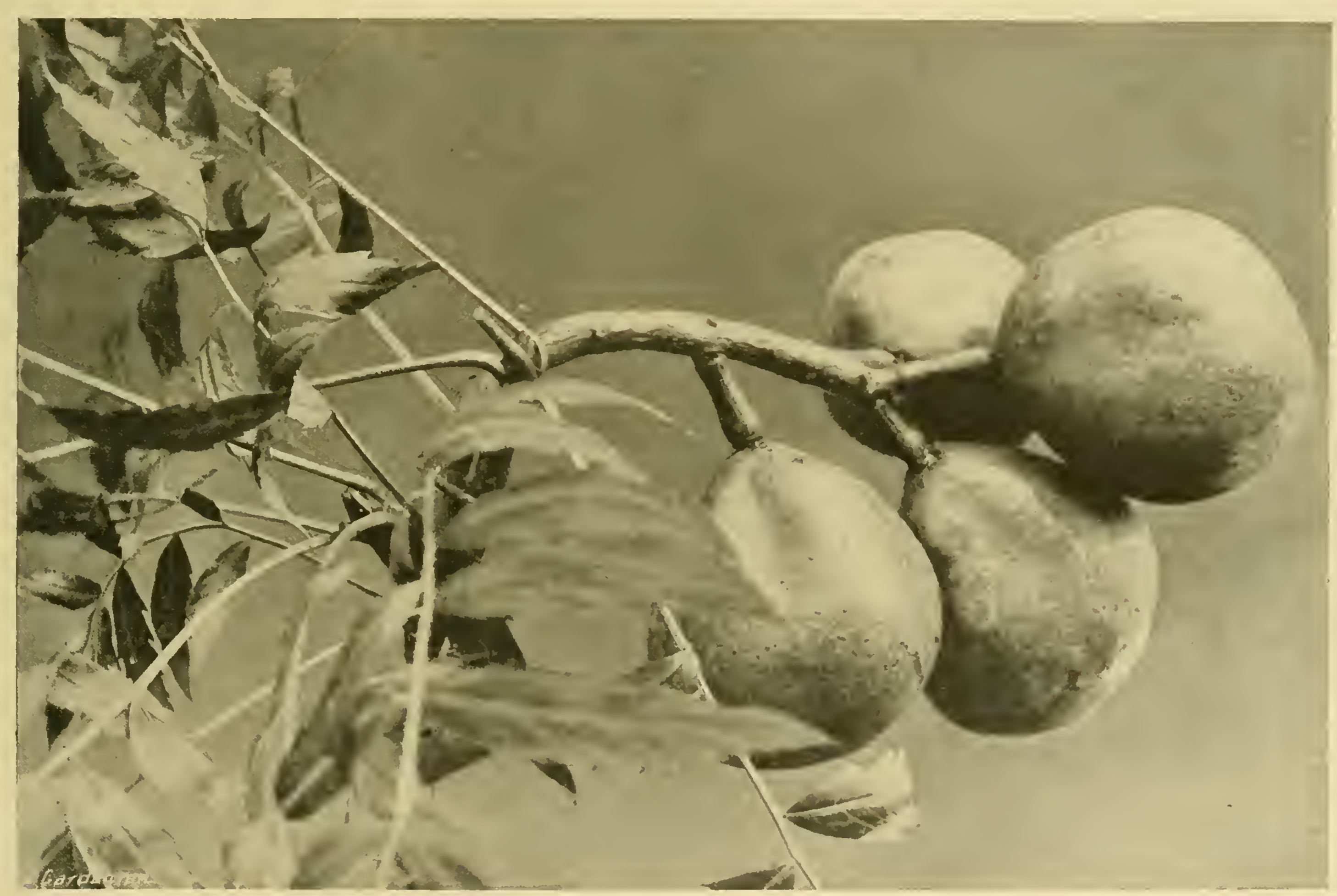
The Watering of Succulent Plants.—M. Buyssens, writing on the requirements of the Cactaceae (*Rev. de l'Hort. Belge et Etrangère*, July 15, 1914), draws attention to the fact, ignored by not a few amateurs, that such succulent plants as the Cactaceae require watering like other plants during their period of active growth; hence it follows that the amount of water which these plants require from April to September varies with the temperature. During the growing season the plants should be inspected twice a week, and those which are dry should receive water. In winter the plants should be examined once a fortnight, and if any are very dry they should receive water sparingly. Epiphyllums may be kept dry from August to October, but Rhipsalis must be allowed to dry up completely. The surface of the soil should be stirred occasionally, and not allowed to form a hard crust. When watering avoid as much as possible wetting the plants.

NURSERY NOTES.

MESSRS. HILLIER AND SONS, WINCHESTER.

Within the boundaries of the ancient city of Winchester, but high up the hillside towards Romsey, Messrs. Hillier and Sons have what may be termed a "Home Nursery," where they display collections of their large nursery stock. Though it contains ranges of glasshouses and frames, this nursery has but little likeness to the conventional. Were it not for the name of the firm at the entrance it might well be imagined to lead to the gardens of a country estate, for the Messrs. Hillier are such keen lovers of trees and shrubs of all kinds that many examples are cherished which will not, nor are expected to, bring any returns. This nursery is open to inspection during working hours, and the townsfolk and visitors fully appreciate the privilege of roaming around the delightful grounds without let or hindrance. In other nurseries within easy reach Messrs. Hillier grow their large stocks on the usual methodical principles. At "Pit Corner," nearly a couple of hundred feet higher, may be seen large breadths of Roses, nearly all budded on Briar stocks, and of Apples on the true broad-leaved Paradise stock, which here has the virtue of producing wood quite free from American blight. At St. Cross Nursery the collections of herbaceous and Alpine plants are grown. The long straight rows of nursery stock, of Pears, Currants of all kinds, Gooseberries, and ornamental trees and shrubs, ready and fit for permanent planting, are far from being uninteresting, and no one could fail to be impressed by the sturdy and healthy appearance of the plants. But it is in the Home grounds, planted with exceedingly interesting trees and shrubs, that the garden lover prefers to spend most time. Just inside the gates on the way to the office an usually fine Paulownia imperialis over 25 feet high and measuring 3 feet 8 inches at 4 feet up the girth arrests attention. This tree flowers well nearly every summer, and is now bearing many racemes of fruit (see fig. 61). In this nursery, where a fair loam overlies chalk, young Paulownias have already made growths 10 feet long, with exceptionally large leaves. The flowering season of the majority of trees and shrubs is over, but many of the fruits of the less common subjects are of especial interest; they carry, for example, the relatively large Walnut-like fruits (see fig. 62) hanging on the bushes of Xanthoceras sorbifolia, fruits of Piptanthus nepalensis, and the legumes of Sophora tetraptera are much in evidence. A little way beyond the tall Paulownia there is an especially fine specimen of Gymnocladus canadensis, which, contrary to its usual habit, is very shapely. The Sugar Maple (Acer saccharinum), which assumes such glorious colouring in the autumn, is here represented by a fine tree over 35 feet high, which contrasts finely with the glaucous foliage of Pyrus torminalis. The almost numberless species which thrive so well in this nursery show that the possession of a chalk subsoil need not prevent the culture of a great variety of trees and shrubs. Except for a comparatively few genera, of which Rhododendron, Erica, and certain Conifers are well-known examples, the choice for such soils is not greatly restricted. But it is interesting to note that, generally speaking, whilst most of the shrubs which are native of the western United States of America luxuriate in chalk soils, those from the eastern States, although belonging to the same genus, are chalk-haters, and if they can be induced to live at all eke out a miserable existence. To overcome this Messrs. Hillier and Sons acquired nursery ground at a lower level, where the soil, although still overlying chalk, contains very little free lime, and is deeper. Here are grown the bulk of the Conifers, Heaths, and Rhododendrons. It is curious that whilst Betula pubescens and Calycanthus occidentalis flourish on this loam over chalk, Betula alba and Calycanthus floridus dislike it. Of the many shrubs, generally considered to be half-hardy, that are perfectly successful at the home nursery, Fabiana imbricata, Perovskia atriplicifolia, Teucrium fruticans, Abelia chinensis, Olearia stellulata, Solanum crispum, Fremontia californica, Punica Granatum, Eucryphia pinnatifolia, and Carpenteria californica are a few names which have been taken at random.

The water garden is the most delightful feature of this interesting nursery. In a pleasant, sheltered corner open to the midday sun a pool, spanned by a rustic bridge draped with Wistarias and Polygonum baldschuanicum, is filled with an up-to-date collection of hardy Nymphaeas. Of the large-flowered sorts, N. gloriosa, N. William Falconer, N. Gladstoniana, N. Marliacea rosea, and N. M. chromatella are a selection, and the smaller but equally charming Leydeckeri hybrids are also represented. At the margin of the pool there are many appropriate plants, and on drier ground groups of Monarda didyma, Eupatorium purpureum, Spiraea palmata, and other herbaceous perennials add a welcome brightness. Many Bamboos, a collection of Viburnums, prostrate Junipers and similar shrubs are very effective in the middle distance; and a bog garden contains numerous Primulas as well as a great variety of other moisture-loving plants. The rock garden, which already contains a good collection of Alpines, is being extended, and dry walls are to be constructed to illustrate the many plants which may be grown in this way.



[Photograph by C. P. Raffill.

Fig. 62.—A fruiting spray of Xanthoceras sorbifolia.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

The Season at Hawick.—The season has been exceptionally hot and dry in these parts. We generally have a fine and plentiful supply of Strawberries, but this season mice and mould have quite destroyed the fruit. What is the cause of the mould? It begins as a small spot, and spreads over the whole berry. We have never seen the disease here before. The mice I never saw before till last year when they were found in one of the houses, and this year the gardener has trapped eight amongst the Strawberries. They do not eat the berries, but bite through the stem of the small and unripe fruits, leaving them in a heap. They are larger than the ordinary mouse, pale brown, and quite white underneath. Such mice have never been seen here before. I do not know if others have noticed the large numbers of plants that have been double stemmed (fasciated), including Lilies, Delphiniums, and, most curious of all, a Vegetable Marrow, which produced a large flat end about a yard long. *Ina Scott-Elliott, Teviot Lodge, Hawick, Roxburghshire.*

[The mould is a fungus which first appears on the leaves and later on the fruit. In future spray the plants with the Bordeaux mixture at half the usual strength twice before the flowers expand. The "mice" are probably voles, which cause injury in the way you describe.—Eds.]

Spinach and its Substitutes (see p. 117).—Mr. Brotherston's article on this subject is most interesting. I do not, however, see any mention of two of the best substitutes for ordinary Spinach: Spinach Beet and New Zealand Spinach. There is no more useful vegetable for gardens of limited extent than Spinach Beet. It thrives well in small gardens, where a few rows will furnish a continual picking over a lengthened season. If the seed is sown early in April in well-worked soil it soon germinates, and the first leaves are ready by the time the bulk of spring Cabbages are over. The seed may be sown in rows 18 inches apart, and by the time they are thinned the plants should be almost 6 inches asunder. These April-sown plants, if kept well picked, will continue to push up new leaves freely till autumn is well advanced. Occasional pickings, depending a good deal upon the weather, may be made in winter, and, with the return of spring, a crop of young leaves will be produced. If a second sowing is made in July or August the leaves will be ready for picking as soon as, or even before, the first batch commences to push up its flower spikes, when the plants should be cleared off the ground. New Zealand Spinach

(Tetragonia expansa) is usually recommended to be sown under glass, but this is by no means necessary. Sown out-of-doors in the middle of April, should the weather be favourable, the young plants will soon make their appearance, and grow rapidly. New Zealand Spinach succeeds best in a rich, well-worked, warm soil. When growing freely the plants spread rapidly, so that a distance of 3 feet should be allowed between the rows. Half-a-dozen rows 10 feet long will yield a good picking two or three times a week until frosts occur; but, unlike Spinach Beet, this crop is frequently injured by frost. *W. T.*

R.H.S. Saxifrage Conference, 1915.—It is with the greatest possible regret that, on account of the present unfortunate relations between this country and Germany, the Council of the Royal Horticultural Society feel constrained to postpone till happier times the Saxifrage Conference announced for next year. *W. Wilks, Secretary.*

Simple Methods of Preserving Fruit.—Whilst engaged in the gardens at Park Place, Henley, we used to bottle fruit in plain water, which is done as follows:—The fruit is put in bottles and the latter are filled with water, which is sterilised by boiling, the length of time to be determined by the nature of the fruit. Soft fruits, such as Loganberries and Blackberries, require less time than Plums and similar fruits. Any saucepan will do for boiling, provided the bottles do not rest directly on the bottom. They should be stood on a thin piece of wood or cardboard. I have gone to much trouble in trying to persuade fellow-gardeners to preserve fruit in this manner. If we remember how our grandmothers filled bottles with fruit and boiled them in the copper no one would have cause to grumble at having too much or too little fruit, because this system makes it quite possible to have a regular supply of fresh fruit at all times. It was with pleasure I read your note on this subject. *T. I. Powell, Bawdsley Manor Gardens, Woodbridge.*

—— The best way to preserve fruit without sugar is as follows:—Warm the bottles on the fireplace and then fill them with fruit. Boil some water and let it stand for a little while to go just off the boil. Cover the fruit in the bottle with it, and then pour melted mutton suet in the neck of the bottle about one inch thick. By this means the bottles will be made airtight. *John Redmile, Balderton Hall Gardens, Newark.*

Summer Pruning of the Plum.—In the issues for June 13 and July 4 two able authorities gave helpful advice on the summer pruning of the Plum. It has occurred to me that neither of your correspondents dealt with a particular habit of growth sometimes met with in Plum trees when cultivated on clayey subsoils. I refer to a tree growing "one-sided," that is, several of the growths quite suddenly in one season commence to grow vigorously on one side of the tree and continue to do so, more especially in the case of trees trained on walls or fences. A tree of Coe's Golden Drop Plum has behaved exactly in this way here this year. To pinch out or pinch back these strong shoots seems to me but to aggravate the trouble, for they at once start again into growth. Moreover, it often happens that these extra strong shoots are needed to fill empty spaces, being frequently main side shoots. My practice is to leave these strong main growths and root prune or wholly lift the tree in the autumn. The shoots are cut back at the time of winter pruning. To cut out or pinch back rank growths of any fruit tree is not, I think, sufficient; the roots must also be pruned. *C. Turner, Ken View Garden, Highgate.*

Cross Pollination in Apples, Pears, Plums and Cherries.—Having been asked to collect information as to which varieties of Apple, Pear, Plum, and Cherry yield good crops when two varieties are planted together in an orchard, and which varieties yield badly when planted together, I should highly value any careful observations by readers of the *Gardeners' Chronicle* on the following points:—(1) In orchards of one or more acres of Apple, Pear, Plum, or Cherry planted with one single variety, does that variety crop well? We wish to get information as to which varieties can be safely planted alone. Apparently Bramley's Seedling is an exception, and can be planted successfully in considerable quantities alone (though probably still more successfully intermixed with another variety), whereas Lane's Prince Albert planted alone in block is a failure. (2) In orchards entirely planted with two varieties do both varieties crop well, or does one variety crop well and the other badly? Or do both varieties crop badly, being apparently unsuited to cross-pollination? Thus in many orchards Cox's Orange Pippin and Worcester Pearmain both crop particularly well where intermixed, whereas Cox's Orange Pippin planted with Peasgood's Nonesuch is unsuccessful. (3) Any notes on the proportion of the two varieties, whether equal in number, or, say, in six or eight will be welcome, as we wish to find the best proportion and the best arrangement to ensure cross pollination. *Cecil H. Hooper, Bridge Street, Wye, Kent.*

Large Peaches.—On July 25 I gathered two fruits of Sea Eagle Peaches, one of which weighed 14 ozs. and the other 16 ozs. I had previously gathered six others weighing 14 ozs. each. The tree bore 40 fruits, several of which weighed 12 ozs. *E. Clements, Lamb Close House Gardens, Eastwood, Nottinghamshire.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 87-93.)

(*Continued from p.* 137.)

Hertfordshire.—There was prospect of excellent crops of hardy fruits of every kind when the trees were in flower, but cold north-east winds at the latter part of May, together with slight frosts of May 26 and 27, did much damage. The Apple crop was badly affected, and Strawberries, although protected, did not entirely escape. The earlier varieties suffered also from a long period of dry weather when the berries were swelling; the late varieties were very good. Cherries, both sweet and Morello, were abundant, and Peaches and Nectarines quite up to the average. Pears require much thinning, and the crop of small fruits is a very good one. *H. Prime, Hatfield House Gardens, Hatfield.*

—— After a fine promise, the fruit crops are somewhat disappointing. The severe frosts which occurred here at the end of May did considerable damage, especially among the smaller fruits, such as Currants, Gooseberries, Raspberries and early Strawberries. Standard Plums were practically ruined in the orchards, but the crop on walls is good. Cherries, both sweet and Morello, were very plentiful and good. Apples and Pears are good average crops; the trees are wonderfully clean and the fruits swelling well. Peaches and Nectarines promise well. The soil here is a very stiff clay, which is unworkable during wet weather, and during times of drought the surface cracks badly and vegetation suffers considerably. *Edwin Beckett, Aldenham House Gardens, Elstree.*

—— The fruit crops are equal to the average. Apples are variable. Some trees—e.g., King of the Pippins, Golden Noble and Dutch Mignonne—are over-cropped; other varieties have not more than half a crop. Pears are exceptionally plentiful; the varieties Marie Louise, Beurré Diel and Beurré Bosc had to be thinned severely. Peaches, Nectarines and Walnuts are plentiful, but Cobs and Filberts are much below average. The first part of the early Strawberry crop suffered considerably during the damp days early in June. The soil is a good loam on a gravel subsoil. *J. G. Walker, Oak Hill Park Gardens, East Barnet.*

—— The Apple crop is the most disappointing of all. The trees flowered most profusely and a few varieties have good crops; others have a partial crop, and a great many not a single fruit, for the unfavourable weather and severe attacks of pests quite destroyed the bloom. Pears are better and at present this crop promises well. Stone fruits of all kinds are good, except that silver leaf is rather prevalent on Plums. Small fruits are good, but the prolonged drought up to July 2 affected the swelling of Strawberries. *E. F. Hazelton, North Mymms Gardens, Hatfield.*

—— The fruit crops in this district are, on the whole, fairly good. Apples set very well, but many fruits have fallen; however, these seems to be a fair crop left, and the quality is very good. Small fruits have been above the average, all kinds being clean and good. The soil here is a heavy loam with a chalky clay sub-soil, which is very retentive, and we do not suffer from drought so quickly as in some districts. *Charles A. Heath, Great Hallingbury Place Gardens, Bishop's Stortford.*

—— Apples are not so plentiful as the quantity of blossom promised. Hot, dry weather at the time of flowering was favourable to caterpillars and much of the blossom fell early. Pears on walls are yielding an average crop, but many of the fruits are damaged by the Pear maggot. Plums and Damsons are carrying heavy crops. Cherries flowered well, but the fruits dropped freely. Peach and Nectarine trees are carrying good crops; they are clean and healthy and very promising for 1915. Apricots are a poor crop. Strawberries have been exceptionally plentiful. Givon's Late Prolific withstands wet and Waterloo is good for late cropping. Walnuts are abundant. *W. J. Snell, Wimpole Gardens, Royston.*

Leicestershire.—The fruit crops in this district are the worst on record for thirty-four years. The Apple, Pear and Plum trees in the open orchards are fruitless. In the sheltered garden some varieties of Apples have an average crop, viz.:—Bismarck, Lord Grosvenor, Belle Pointoise, The Queen, Peasgood's Nonesuch and Stirling Castle. Pears on walls yield an average crop. Of stone fruits Peaches are the best, and the trees are in a clean, healthy condition. Only on the walls are there any Plums and they are a short crop. Silver leaf disease is becoming very prevalent here. Small fruits were much damaged by frosts in May. Strawberries, Black Currants and Raspberries were most damaged, and there was only a small crop of late Raspberries. Gooseberries are abundant and in a clean condition. The soil is a medium loam, resting on a subsoil of red clay, which retains much moisture even in times of prolonged droughts. *D. Roberts, Prestwold Gardens, Loughborough.*

—— All kinds of fruits promised good crops until May 2, when a severe frost injured the Apples just when most of the trees were in full flower. Pears and Gooseberries were set and the foliage being fairly advanced in growth, the young fruits escaped injury. The thermometer, 4 feet above the ground, registered 26°, and 20° on the grass; but fortunately the weather was very dry, or the consequences would have been far worse. On May 26 and 27 severe frosts occurred again when Strawberries, Raspberries and Loganberries were in full flower, and destroyed all blooms that were open. The thermometer 4 feet above the ground registered 26° and 27°, and on the grass to 24° and 25°. Many other plants in the garden were severely injured. The Apples we have this season are chiefly on the tops of tall standard trees, where the frost was not so severe. Dwarf bush trees have scarcely any fruit. Apricots, Peaches, Gooseberries and Plums are yielding the best crops we have had for several years past. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

Northamptonshire.—The fruit crops are, on the whole, good. There was a surprising show of blossom, which, however, suffered from the frosts of May 25 and 26; otherwise we should have had a record year. The early blooms of the Strawberries were all blackened. *C. F. Crump, Althorp Park Gardens, Northampton.*

Nottinghamshire.—The spring gave excellent promise for fruit of all kinds, and the trees were covered with blossom; but on the night of May 1 11° of frost were registered, which did considerable damage. Apricots were the size of marbles, but owing to the frost the fruits nearly all dropped. Early Apples and Pears were set and swelling; they also dropped, and trees that were in flower at the time were completely ruined. Peaches, Nectarines and Plums have also dropped. Sweet Cherries escaped injury, being protected by their foliage. Morello Cherries suffered badly; all small fruits are average crops excepting Gooseberries, which are plentiful, as the bushes were protected with nets. Early Potatos, French Beans and Scarlet Runners were cut down near the ground. The oldest gardener in this locality informs me that it is 50 years since so much damage was done by frost in this district. The damage is not only confined to gardens; forest trees, such as Oak, Beech, Walnut, Chestnut, and many fine shrubs suffered badly; in fact, many of them were killed. Our soil is light in texture and on a subsoil of sand. *James B. Allan, Osberton Gardens, Worksop.*

—— The fruit crops vary very much in this locality. On the low-lying land Apples, Pears and Plums are total failures, as the spring frost destroyed the bloom. On the higher ground there was a good crop, but many Apples and Plums dropped during the long drought. There are heavy crops of wall fruit in some places, whilst in others there is practically none. Nuts are carrying a heavy crop in one plantation, but elsewhere the frost killed most of the bloom. Gooseberries are under average, and also Black Currants. Red and White Currants were excellent, Raspberries and Loganberries are cropping well where they escaped the frost, but are a failure on low land. Early blooms of Strawberries were destroyed by frost, so that the crop was late and of very short duration, the heavy rain having caused the berries to rot. *J. R. Pearson and Sons, Lowdham.*

—— All fruits, excepting Pears and Strawberries, are average crops. Strawberries were a complete failure; 10° of frost on May 2 destroyed what appeared to be an average crop of berries. Apples, especially on young trees that were protected, are very plentiful. Currants have been plentiful and of good quality. Gooseberries and Morello Cherries are also very satisfactory; but sweet Cherries, although fairly numerous on old trees, failed to swell to their usual size and were inferior in quality, owing to dry weather at the time the fruits were swelling. Nuts are fairly plentiful on some bushes. *A. Lehane, Park Hall Gardens, Mansfield.*

Oxfordshire.—The fruit blossom was abundant, and, despite severe frosts, has fulfilled expectations. Apples and Pears are clean and good, and Raspberries yielded a heavy crop. Strawberries gave only an average crop, and the season was a short one on account of the dry, hot weather. Potatos have suffered severely through the same cause. Rain fell during July, which may save the later crops Peas have been extra good. The soil is a light loam on gravel and chalk. *J. A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

—— Considering the rather inclement weather that prevailed at the end of April (when Plum and Cherry trees were in bloom) there are heavy crops of stone fruits, but the fruit is not very large. During the early part of May, when the majority of Apple trees were in bloom, the weather here was cold and windy, but there were showers of rain at intervals, so that the Apple crop is a heavy one. The hot, dry summer of last year was inimical to the growth of the Strawberry and Raspberry, so that these crops are not so good as usual. Our soil is shallow and very stony. We are well protected by surrounding woods; consequently our gardens escape injury by late spring frosts. *A. J. Long, Wyfold Court Gardens, Reading.*

—— Strawberries and Apples suffered severely from the May frosts. Most wall fruits were well set and protected by foliage from the frost which occurred at the end of May. The soil here is a light loam. *C. E. Munday, Nuneham Park Gardens, Oxford.*

—— The failure of the Apple crop may be attributed to frost on May 2. The trees were covered with good healthy bloom, and there was every prospect of a bountiful crop. Trees in the sheltered parts of the garden are carrying very good crops. Apricot trees are bearing well this year after six bad seasons. *T. W. Whiting, Shotover Park Gardens, Wheatley.*

Shropshire.—The fruit crops in this neighbourhood are, on the whole, very good, but in some orchards fruit is scarce owing to 10° of frost at the end of May. Early Strawberries that were in flower were also damaged, and the crop was very poor; but late flowering sorts fared better, and we had a full crop, especially of Givon's Late Prolific. Small fruits are bearing heavy crops. *Alex Haggart, Moor Park Gardens, Ludlow.*

—— Strawberries yielded poorly this year, the bulk of the trusses having been destroyed by frost. Where we picked 750 lb last year we have only had about 100 lb. this season. Apples, Pears and Plums set well, and are both promising crops, although in some places they are light owing to severe frosts. The soil is clay-loam, over new red sandstone. *G. T. Malthouse, Harper-Adams Agricultural College, Newport.*

—— Fruit is scarce owing to severe frost and cold winds in May. On May 27 we registered 9° of frost; we had a splendid show of bloom and the fruit set well, but frost ruined the good prospect. *George Risebraw, Hatton Grange Gardens, Shifnal.*

Staffordshire.—There was a splendid set of fruit, but the frost on May 2 brought all the Apples and most of the Pears and Plums off the trees. The soil is light, with sandy subsoil. *A. Cheney, Shenstone Court Gardens, Lichfield.*

Warwickshire.—All kinds of fruit trees in this district showed promise for abundant crops in the spring, but owing to 10° of frost on the morning of May 2 practically every blossom was frozen. Within several miles radius of these gardens the Apples, Pears and Plums are complete failures. Small fruits are yielding a poor crop. *Chas. Harding, Ragley Hall Gardens, Alcester.*

—— The fruit crops on the whole are satisfactory, with the exception of Plums and early varieties of Strawberries. The failure of these was due to severe frosts at the end of May. Until then there was a promise of very good Plum and Strawberry crops. Royal Sovereign and Givon's Late Prolific Strawberries have been exceptions, and have fruited very well indeed. Pears would have been better had they borne less bloom; it was too crowded to set well. The crop of Apricots was the best for some years. *H. F. Smale, Warwick Castle Gardens, Warwick.*

5. SOUTHERN COUNTIES.

Berkshire.—Apple trees were clean and healthy, Cox's Orange Pippin especially being very fine. Among Pears, Doyenné du Comice is extra good, and there were heavy crops of Cherries. The fruit crops in general are good, and the trees clean. *A. MacKellar, Royal Gardens, Frogmore, Windsor.*

—— The promise of an abundant fruit harvest has once again failed to mature owing to severe frosts at the latter end of May, which did a large amount of damage in this neighbourhood, both to fruits and early vegetables. Walnuts were quite blackened, Potatos and Beans cut down, the Raspberry crop completely ruined, and Strawberries in open quarters badly damaged. Apples had the appearance of being scalded and dropped from the trees. Peaches, Nectarines and Apricots on walls with coping and protection are yielding good crops; Pears on walls are average. Cherries look well, and Gooseberries were more than an average yield. Currants were a fair crop. Our soil is light, sandy loam on gravel. *J. Howard, Benham Park Gardens, Newbury.*

—— Apples, Pears, Cherries, Plums, Peaches, Apricots and all bush fruits are yielding good crops. Early Strawberries, Raspberries and Loganberries were severely injured by the frost. Our best second early Strawberry this year has been The Earl, a good cropper. Givon's Late Prolific still holds its own as a late cropper. The past dry month has seriously interfered with the growth of vegetables. *A. B. Wadds, Englefield Gardens, Reading.*

—— The fruit crops are very good. Apple trees that did not carry heavy crops last season are well laden with good, clean fruit. Pears are also prolific. The best Pears for our light soil are Bergamotte Esperen, Beurré Hardy, Beurré Superfin, Charles Ernest, Conférence, Doyenné Boussoch, Doyenné du Comice, Emile d'Heyst, Gansel's Bergamot, Louise Bonne of Jersey, Triomphe de Vienne, Williams' Bon Chrétien and Winter Nelis. Plums are very good. Peaches and Nectarines set exceptionally well. All bush fruits are excellent. Strawberries were particularly good, as we escaped the frosts in May. *F. J. Thorne, Sunningdale Park Gardens, Sunningdale.*

—— April generally was favourable to fruit until about the 29th, when the nights turned cold, with frost and winds. May, too, was warm until about the 22nd, when several degrees of frost were registered during three or four nights in succession. This injured the young, tender growth, and Potatos in low-lying districts were cut down to the ground. In May and June we suffered from drought, and Raspberries and Strawberries have been very poor. Gooseberries were good, Currants fair. Apples and Pears have dropped freely, but in July a good deal of rain fell. With favourable weather Apples should furnish a good crop. Our soil is a fairly heavy loam. *H. Young, Park Place Gardens, Henley-on-Thames.*

—— I consider this season to be one of the best for Apples, Pears (especially on the walls), Plums, Gooseberries, Raspberries and Black Currants. Sweet Cherries and Apricots are not a success, owing to our soil being very gravelly. Peaches and Nectarines are excellent. *Joseph Atkinson, Oakley Court Gardens, Windsor.*

—— The fruit crops are particularly good, especially Apples, Pears, Apricots and all bush fruits. We were very fortunate in missing the late frost. The soil is of a light nature, resting on gravel. *W. Turnham, Greenlands Gardens, Henley-on-Thames.*

(*To be continued.*)

SOCIETIES.

ROYAL HORTICULTURAL.

Trials of Melons and Beans.

A sub-committee appointed by the Fruit and Vegetable Committee visited Wisley on the 30th ult. to examine the trials of Melons and French Beans.

The following awards were recommended :—

Melons.—The variety Sentinel (P. Davies) was Highly Commended, and the First-class Certificates previously awarded to the varieties Frogmore Scarlet (A. Dawkins), Hero of Lockinge and Sutton's Scarlet, both from Sutton and Sons, were confirmed.

French Beans.—First-class Certificates were awarded to the varieties Early Fortyfold (Watkins and Simpson), and Perpetual (James Carter and Co.), which variety had previously received an Award of Merit. An Award of Merit was granted to Eldorado (Hurst and Sons and F. Simpson), and Magpie (James Carter and Co.). The following varieties were Highly Commended :—Allerfrischer Stuttgarter (Pfitzer), Dwarf Prolific, as a pot variety (Barr and Sons), Mammoth Six Weeks (Nutting), Masterpiece, as a pot variety (Sutton and Sons), Primo (Watkins and Simpson), Prolific Negro (Sutton and Sons), St. Andrews (Hurst and Sons), and Superlative (Sutton and Sons and Nutting). White Model, sent by James Carter and Co., was Commended. The First-class Certificates previously awarded to Improved Canadian Wonder (Barr and Sons) and Selected Canadian Wonder (Sutton and Sons) were confirmed, whilst Awards of Merit previously awarded to Evergreen (Hurst and Sons and Sutton and Sons), Excelsior (Barr and Sons), and Sunrise (James Carter and Co.) were also confirmed.

A sub-committee of the Fruit and Vegetable Committee made the following further awards at Wisley on the 10th inst. :—

Melons.—Emerald Gem (Sutton and Sons), Mymms Hero (Hazelton), Perfection (Sutton and Sons), and Windsor Castle (Barr and Sons) received Awards of Merit, whilst Amberwood Beauty (James Carter and Co.), Barnet Hill Favourite (James Carter and Co.), and King George (R. Veitch and Son) were Commended.

The First-class Certificate awarded to Sutton's Scarlet at a previous trial, and the Awards of Merit to Duchess of York (Dickson, Brown and Tate), and Eminence (Sutton and Son and A. Dawkins) were confirmed.

Climbing French Bean and Re-selected Climbing French Bean, both shown by James Carter and Co., were Highly Commended.

Trial of Pentstemons.

A sub-committee appointed by the Floral Committee visited Wisley on the 31st inst. to examine the trial of Pentstemons. The following varieties received Awards of Merit :—Lady Sybil, Gay Garland, Aldenham Pride, Persimmon, Admiral Togo, Sportsman, Fair to See, Mrs. A. C. Sweet, and Virgil, all shown by Messrs. Cutbush and Son; Rosamund (Lapworth Nursery Co.); James Douglas, Jane Dieulafoy, and Phryne (Barr and Sons); Southgate Gem (Barr and Sons, W. Simpson, and Dobbie and Co.); Margarite Baden (Pfitzer); Crimson Gem (Beckett); and Alex. Wood (Dobbie). The following were highly commended :—Gertrude Saunders, Clorinda, and The Gift, all sent by Messrs. W. Cutbush and Son; Tweed (Messrs. Dobbie and Co.); Seagull and Mrs. P. S. Hayward (Hayward).

The Awards of Merit already granted to the following varieties were confirmed :—Mrs. Fred. Fulford (Thompson), and President Carnot (Dobbie and Co.).

SCOTTISH HORTICULTURAL.

August 4.—The monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on the 4th inst. Mr. King, the president, was in the chair, and there was an attendance of 70 members.

The evening was devoted to a discussion on Roses. The discussion was opened by Mr. Geo. M. Taylor, who advocated a revision of the method of judging Roses in vogue at the National Rose Society's exhibition, and a new classification of Roses into perpetual-flowering, summer-flowering, autumn-flowering, etc., the present classification being obsolete. As a stock for light soils, he strongly advocated seedling Rosa laxa, which would live under drought conditions where the Briar would die. Mr. Somer said he had not found that Roses on R. laxa stock transplanted so well as those on the Briar. The discussion was also taken part in by Messrs. Fife, Pirie, Whytock, Fortune, Grieve, Comfort and Henry.

The exhibits were :—Collection of Roses, from Messrs. Dobbie and Co. (awarded a Cultural Certificate); Lilium chalcedonicum, Gladiolus "Halley," and Stenanthium robustum, from Messrs. Dickson and Co. (awarded a Cultural Certificate for Stenanthium); seedling Clove Carnation "Hon. Helen Baillie Hamilton," from Mr. R. P. Brotherston, Tyninghame Gardens; and Gooseberry "Green Walnut," from Mr. R. Cairns, Murieston.

NEWARK AND DISTRICT HORTICULTURAL.

August 3.—The annual exhibition of the above society, held on the 3rd inst. in the grounds adjoining Hatton House, Newark, after a lapse of some years, was a pronounced success. The exhibition was opened by the Mayoress, Mrs. J. C. Kew, under the presidency of the Mayor, Mr. J. C. Kew.

In the open classes the prize-winners were as follows :—*Twelve Plants in Pots:* 1st, Miss Gilstrap, Winthorpe; 2nd, Mrs. W. O. Quibell. *Twelve Vases of Sweet Peas:* 1st, Mr. H. E. Branston, Balderton. *Six Vases of Sweet Peas:* 1st, Mr. H. E. Branston; 2nd, Miss Gilstrap. *Twelve Roses:* 1st, Mrs. A. J. Platt, Barnby Manor; 2nd, Mr. H. Cooper, Flamborough; 3rd, Mr. H. E. Branston. *Six Roses:* 1st, Mr. H. Cooper; 2nd, Mr. H. E. Branston; 3rd, Mr. H. L. Reynard. *Twelve Varieties of Cut Garden Flowers:* 1st, Miss Gilstrap; 2nd, Mr. H. E. Branston; 3rd, Mrs. W. O. Quibell. *Carnations:* 1st, Mr. H. E. Branston; 2nd, Miss Gilstrap. *Grapes:* 1st, Miss Gilstrap; 2nd, Mr. A. Webb; 3rd, Mrs. A. J. Platt. *Six Dishes of Fruit (excluding Grapes)*: 1st, Miss Gilstrap; 2nd, Mr. A. Webb; 3rd, Mrs. A. J. Platt. *Tomatos:* 1st, Mr. A. Webb; 2nd, Miss Gilstrap; 3rd, Mrs. Quibell. *Collection of Vegetables:* 1st, Mrs. W. O. Quibell; 2nd, Miss Gilstrap; 3rd, Mrs. A. J. Platt. *Cucumbers:* 1st, Messrs. Bailey and Oldham, Balderton; 2nd, Mr. A. Webb. *Vegetable Marrows:* 1st, Mr. A. Webb; 2nd, Mr. H. L. Reynard. *Peas:* 1st, Miss Gilstrap; 2nd, Mr. H. Cooper. *Runner Beans:* 1st, Miss Gilstrap; 2nd, Mrs. A. J. Platt. *Onions:* 1st, Mrs. W. O. Quibell; 2nd, Mrs. A. J. Platt; 3rd, Miss Gilstrap. *Potatos (white and coloured):* 1st, Mrs. W. O. Quibell; 2nd, Mr. H. L. Reynard; 3rd, Miss Gilstrap.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

August 10. — The monthly meeting of this society was held at the R.H.S. Hall on Monday, the 10th inst. Mr. Chas. H. Curtis presided. Three new members were elected. One member withdrew £3 16s. 10d., being double the amount of interest standing to his account, and three members over 70 years were allowed to withdraw from their deposit account, amounting to £14 2s. 9d.; two members were assisted from the Convalescent Fund. The sick pay for the month amounted to £66 12s. 8d. (ordinary), £25 11s. 2d. (State section), and £15 (maternity claims). The secretary reported that the Government has set up a Benevolent Fund, and any member who had been unemployed under the State section may have his card stamped for him, that no deductions should be made in his benefits.

ROYAL SCOTTISH ARBORICULTURAL.

The diamond jubilee of this society was celebrated recently by a tour of inspection through the woods and afforestable lands of Scotland, Many foreign and Colonial guests were invited to be present, and invitations were accepted by distinguished representatives of other countries. The homeland guests included :—England—Sir William Schlich, president of the Royal English Arboricultural Society; Professor Somerville, Oxford University; Mr. William Dawson, Cambridge University; Mr. H. J. Elwes, of Colesborne. Wales—Professor Fraser Story, University College, Bangor. Ireland—Mr. R. J. Campbell, Board of Agriculture, Dublin; Professor Augustine Henry, Dublin; and Mr. A. C. Forbes, Chief Inspector of Forestry, Dublin. Scotland—Mr. John D. Sutherland, forestry member of the Board of Agriculture; Dr. John Nisbet, forestry adviser to the Board of Agriculture; Mr. E. P. Stebbing, Edinburgh University; Mr. George P. Gordon, B.Sc., West of Scotland Agricultural College, Glasgow; and Mr. P. Leslie, B.Sc., Aberdeen and North of Scotland College of Agriculture. The members of the society present included Captain Archibald Stirling of Keir, president; Sir John Stirling Maxwell, Bart., of Pollok, hon. secretary; Mr. Robert Galloway, S.S.C., secretary and treasurer; Mr. W. Steuart Fothringham, of Murthly, vice-president; Mr. Sydney J. Gammell, of Drumtochty and and Countesswells, vice-president; Dr. A. W. Borthwick, hon. editor of the *Transactions*; Mr. Charles Buchanan, convener of the Executive Committee; and Mr. Mair, Edinburgh.

The association was founded in 1854, and there are more than 1,400 members. The whole work of the society has been concentrated and directed towards two ends—first, to draw Scottish foresters together and enable them to compare and classify experience; and, second, to obtain from the State recognition of and assistance for sylviculture. In 1910 the society carried out, entirely at its own expense, a survey of a district considered suitable for afforestation at the west end of Loch Ness, Inverness-shire. This was done to furnish the Government with information, and was conducted under the superintendence of Lord Lovat and Captain Stirling of Keir, the president. The survey was very successful, and following upon it the society adopted a new policy embodying the following five definite objects :—1, The appointment of a Department of Forestry; 2, the purchase of a demonstration area, where students and apprentices can be trained; 3, the appointment of expert advisers capable of making working plans for existing woods; 4, a preliminary survey of ascertained sites suitable for afforestation; 5, the initiation of a few cautious schemes of afforestation in the districts which appear to be best fitted for the industry.

On the financial side, considerably over £20,000 has been spent directly in the interests of sylviculture in Scotland, whilst on Continental tours undertaken with a view to obtain insight into forestry methods abroad nearly £10,000 has been expended.

The majority of the invited guests arrived in Edinburgh on Saturday, June 27. That evening they proceeded to Perthshire, where they were entertained until the following Monday. On the morning of that day, the party assembled at the Station Hotel, Perth, from whence they proceeded in motor-cars to Scone Woods, owned by the Earl of Mansfield. Beautiful weather prevailed, and the route lay through most charming scenery, which evoked the warmest admiration of those who had never previously visited Scotland. Pitcairngreen and Lynedoch Woods were the first visited, and in the latter wood the great attraction were the two Douglas Firs (Pseudotsuga Douglasii) first planted in this country. Sent, with others, by David Douglas, these trees were planted in 1834. The larger of the two is 115 feet in height, and is computed to contain 570 quarter-girth cubic feet over bark. The other is not quite such an imposing tree, but both are magnificent specimens. The visitors were also taken to plantations of trees the seed of which were obtained from the trees just mentioned, and all the trees are thriving splendidly. On Drumcairn, some fine Japanese Larches were seen, and also excellent specimens of Abies nobilis, Cupressus Lawsoniana, Sycamores, Norway Spruces, and European Larch. Dunveigh and Taymount were next explored, where there are many finely grown Douglas Firs.

Mr. W. Steuart Fothringham, convener of the county of Perth, acted as guide when the party entered on his finely wooded estate of Murthly. Here some superb Douglas Fir woods were inspected, and greatly admired. The company then proceeded to Birnam Hotel.

On the Tuesday morning, with Mr. Fothringham again acting as guide, the famous Birnam Wood, immortalised by Shakespeare in his tragedy of *Macbeth*, was one of the chief attractions. The party was unanimous in agreeing that Shakespeare must have had a good knowledge of the woodland features of Central Perthshire when he wrote his play. "What wood is this before us?" asks old Siward, and Menteith's answer is, "The wood of Birnam," and then Malcolm's explicit instructions to his host are given—

> "Let every soldier hew him down a bough
> And bear't before him; thereby shall we shadow
> The numbers of our host, and make discovery
> Err in report of us."

How successful the scheme was is best described in the Messenger's report to Macbeth—

> "As I did stand my watch upon the hill
> I looked toward Birnam, and anon, methought
> The wood began to move."

Some fine Douglas Firs, Japanese Larches, and European Larch woods were inspected, after which the party motored to Dunkeld House, the seat of the venerable Duke of Atholl, who, with his eldest son, the Marquis of Tullibardine, takes a keen interest in the work and policy of the society. Some striking examples of what can be done for posterity were shown here. It was related that John, the 9th Duke, who died in 1846, planted no fewer than 27,000,000 Larch trees and several millions of other kinds. The former covered over 11,000 acres, and, needless to say, the Atholl estate is now reaping the benefit of the far-sightedness shown in the early years of last century. The beauty of the Atholl woods greatly pleased the visitors, and came as a revelation to many. The enormous Larches seen on every side testified to the suitability of the soil for that tree, and great Pines and Spruces from 100, 150, to 200 years old, were much admired.

(*To be continued.*)

GARDENING APPOINTMENT.

[*Correspondents are requested to* write the names of persons and places as legibly as possible. *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. George Mowbray, for the past 18 months Gardener to James Dangerfield, Esq., Cors-y-Gedol Hall, Dyffryn, Merionethshire, and previously Gardener at Lower Hare Park, Newmarket, as Gardener to A. G. Joynson, Esq., Grove Hall, Great Sutton, near Chester.

MARKETS.

COVENT GARDEN, August 19.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	0 6- 1 0
— smaller, per doz. bunches ..	2 0- 4 0
— Carola (crimson), extra large	1 0- 1 6
— Malmaison, per doz. blooms	
— — pink ..	5 0- 6 0
Chrysanthemum, white, per doz. blooms ..	1 0- 2 6
— yellow, per doz. blooms ..	1 0- 2 0
— Sprays, white, per doz. bun...	4 0- 6 0
Coreopsis, per doz. bunches ..	0 6- 0 9
Delphinium, large blue, per doz. bunches ..	3 0- —
Eucharis, per doz.	0 6- 1 0
Gaillardia, per doz. bunches ..	0 9- 1 0
Gardenias, per box of 16 and 18 blooms.. ..	1 3- 1 6
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus, America, pale pink, per doz. spikes ..	0 6- 1 0
— brenchleyense, scarlet, per doz. spikes	0 9- 1 0
— Pink Beauty, per doz. spikes	0 6- 0 9
— The Bride English ..	5 0- 6 0
Gypsophila paniculata, per doz. bunches ..	2 0- 3 0
— white	2 0- 4 0
— — double, per doz bunches ..	3 0- 4 0
Lapageria alba, per doz. blooms ..	1 0- 2 0
Lavender, per bnch.	0 6- 0 9
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long..	1 0- 1 3
— — short ..	0 9- 1 0
— lancifolium album, long ..	1 0- 1 6

	s. d. s. d.
Lilium lancifolium, album, short ..	1 0- 1 6
— rubrum, per doz., long ..	1 0- 1 3
— — short ..	1 0- 1 3
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	8 0-10 0
— special	6 0- 7 0
— ordinary ..	4 0- 5 0
Marguerites, per doz. bunches ..	0 9- 1 0
Orchids, per doz.:	
— Cattleya ..	12 0 15 0
— Harrisonii, per doz. blooms ..	6 0 —
— Odontoglossum crispum ..	3 0- 4 0
Pancratium, per dozen blooms..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Physalis, per doz. bun.	6 0- 8 0
Roses: per dozen blooms, Frau Karl Druschki	1 0- —
— Kaiserin Augusta Victoria	0 6- 0 9
— Lady Hillingdon	0 6- 0 9
— Liberty ..	0 9- 1 0
— Madame A. Chatenay ..	0 6- 0 9
— Melody ..	0 9- 1 0
— Mrs. J. Laing..	0 9- 1 0
— My Maryland..	—
— Niphetos ..	0 9- 1 0
— Richmond ..	—
— Sunburst ..	—
— Sunrise ..	—
— White Crawford	—
Scabiosa, mauve, per doz. bnchs.	2 0- 2 6
Statice, mauve, per doz. bunches..	2 0- 3 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	0 9- 1 0
Stocks, English, white, per doz. bunches	2 6- 3 0
— pink, per doz. bunches ..	2 6- 3 0
— mauve, per doz. bunches ..	3 0- 4 0
Sweet Sultan, mauve per doz. bnchs.	1 6- 2 0
— yellow	1 0- 1 6
— white	1 6- 2 0
White Heather, per doz. bunches..	0 6- 0 9

Remarks.—Business remains practically at a standstill and in many cases prices are lower than last week. There is a slightly better demand for Asters, of which white, pink and mauve varieties are exceptionally fine. Chrysanthemums are becoming more plentiful, and fine blooms of Countess and Mercédès are sold very cheaply. There are also a few bunches of the variety Cranford White. The supplies of Carnations, Roses and Gladioli still exceed the demand and there are few buyers; on the whole the stocks are not so large as last week. Physalis was offered for sale the first time this season.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated ..	30 0-60 0
Asters, Coloured, 48's, per dozen	4 0- 6 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	6 0 —
Campanula isophylla, white, 48's per doz.. ..	10 0-12 0
— — blue, 48's per doz. ..	6 0- 8 0
Chrysanthemum, 48's, per dozen	6 0-12 0

	s. d. s. d.
Cocos Weddeliana, per dozen, 60's	6 0-12 0
— larger, each ..	2 6-10 6
Croton, per dozen	18 0-30 0
Dracæna, green, per dozen ..	10 0-12 0
Erica nivalis, 48's, per dozen ..	10 0-12 0
Ferns, in thumbs, per 100.. ..	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0
— in 32's, per doz.	10 0-18 0
Fuchsias, 48's, per dozen	6 0- 6 0
Geonoma gracilis 60's per dozen..	6 0- 8 0
— larger, each ..	2 6- 7 6

Plants in Pots, &c: Average Wholesale Prices. *contd*

	s.d. s.d.
Heliotropes, 48's per dozen ..	4 0- 5 0
Hydrangeas, Pink, per doz. 48's ..	10 0-18 0
— White	10 0-16 0
— Blue	15 0-30 0
— paniculata ..	18 0-24 0
Kentia Belmoreana, per dozen	6 0- 8 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0
Kentia Forsteriana, larger, per doz.	18 0-36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, pr doz.	18 0-24 0
— — rubrum, per doz. ..	15 0-21 0

	s.d. s.d.
Lilium longiflorum, per dozen ..	12 0-15 0
Lily-of-the-Valley	18 0-21 0
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	4 0- 6 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phœnix rupicola, each	2 6-21 0
Spiræa, White, 32's, per dozen ..	6 0- 8 0
— Pink, 32's, per dozen	9 0-12 0
Verbenas, Miss Willmott, 48's, per dozen ..	6 0- 8 0
— Scarlet King, 48's, per doz. ..	6 0 —

Remarks.—Trade in this department could not be much worse. Ericas are arriving, but there is no demand for them. Pink and white Spiræas are selling very cheaply. There are still good plants of white and pink-flowered Hydrangea. Ferns are at their best condition, but the demand for them, as for other subjects, is poor.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples, Australian, per case ..	9 0 —
— English dessert, per ½ bush. ..	2 0- 4 0
— cooking, 1 bush.	2 0- 3 0
Bananas, bunch:	
— Double Ex. ..	8 0-9 0
— Extra	7 0-7 6
— Medium ..	6 0- 6 6
— Giant	9 0- 9 6
— Extra medium	7 0 —
— Red, per ton ..	£20 —
— Jamaica, p. ton	£16 —
Blackberries, per lb.	0 2- 0 3
Figs, English, per doz.	1 0- 2 6
Grapes: Black Hamburgh, per lb.	0 10-2 0
— English, Gros Colmar, per lb.	0 6- 1 0
— Gros Maroc, per lb. ..	0 4- 1 0
— Muscat of Alexandria ..	0 10-2 0
— Canon Hall, per lb.	1 0- 3 0
Grape Fruit, case:	
— 96's ..	18 0-25 0
— 80's ..	
— 64's ..	
— 64's ..	
Greengages ..	4 0- 6 0

	s.d. s.d.
Lemons, Naples, per case ..	12 0-14 0
— Palermo, per case	7 0-10 0
Melons, English ..	0 6- 1 6
— Canteloupe ..	0 6- 1 6
— Guernsey ..	0 6- 1 6
— Valencia, per case	8 0- 9 0
Nectarines, per doz.	1 0- 6 0
Nuts:	
— Almonds, sack	64 0-65 0
— Barcelona, sack	44 0 —
— Brazils, cwt.	46 0-50 0
— Cob nuts, per lb.	0 4 —
— Coco-nuts, per 100	18 0-22 3
Oranges:	
— Cape, per case	16 0-18 0
— — Navel, p. case	19 0-22 0
— Naples, case ..	6 0- 9 0
Peaches, English, per doz. ..	1 0- 6 0
Pears, English, ½ sieve	3 6- 7 0
Plums, blue, per ½ sieve ..	1 0- 1 6
— English, per ½ bushel	1 0- 1 6
— Orleans, per ½ sieve	1 0- 1 6
— Victorias ..	3 6- 3 6

Remarks.—Large supplies of English cooking Apples are arriving daily, and English dessert Apples available are increasing in quantity. Peaches, Nectarines, Figs and Melons are all very plentiful, as also are Grapes, which are very cheap. Morello Cherries are obtainable, and Plums, Greengages and Damsons are arriving in large quantities. The principal varieties of Pears now on the market are Lammas, Hazel, Clapp's Favourite, Windsor and Williams' Bon Chrétien. Cultivated Blackberries may be obtained in baskets of about 4 lb. to 6 lb., but the season of Raspberries and Loganberries is practically over. Filberts and Cobnuts are now available. At present the supply of Mushrooms is not large, but increased supplies of outdoor Mushrooms are expected. *E. H. R., Covent Garden, August 19, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, ground, per ½ sieve ..	1 0- 1 6
Beans, Scarlet Runner, per bushel	1 6- 2 0
Beetroot, per bushel, long ..	3 0 —
— round	2 0 —
Cabbages, per tally	6 0- 8 0
Carrots, per doz. ..	1 0- 1 3
Celery, per bundle	0 8- 0 9
Cucumbers, per flat	3 0- 4 0
Garlic, per strike..	2 6- 3 0
Horseradish, 12 bundles ..	18 0-21 0
Leeks, per dozen ..	2 0- 3 0
Lettuce, English, Cos, (per tally 5 doz.).. ..	7 6-10 0
Lettuce, English, round, per box	4 6 —
Marrows, per pad	2 0 —
Mint, per doz. ..	2 0 —
Mushrooms, cultivated, per lb...	1 0- 1 3
— Buttons ..	1 0- 1 3

	s.d. s.d.
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, picklers, per ½ bushel ..	3 0- 3 6
— Spring, per doz.	2 0- 3 0
— Lisbon, box ..	8 0- 9 0
Parsley, per dozen bunches ..	3 0- 4 0
Peas, English, bushel	3 0- 4 0
Peas, English, bus.	3 0- 4 0
Radishes, per doz.	1 6- 2 0
Sage, per dozen ..	1 6- 2 0
Spinach, per bushel	2 6- 3 0
Swedes, bag ..	1 6- 2 0
Tomatos, English, per doz. lbs. ..	2 0- 2 3
— seconds ..	1 0 —
Thyme, per dozen bunches ..	2 0- 6 0
Turnip, English, per dozen bunches	3 0 —
Watercress, per doz.	0 4- 0 6

Remarks.—There are ample supplies at reasonable prices. *E. H. R., Covent Garden, August 19, 1914.*

New Potatos.

	s. d. s. d.
Bedfords	3 0- 3 9
Blacklands	2 9- 3 0
Lincolns	3 0- 3 9

	s. d. s. d.
Kents	3 3- 4 0
Essex	3 0- 3 9

Remarks.—Trade is very quiet and prices are low. Disease is appearing in most samples, and this fact is sure to further upset trade for a while. Consignments are quite equal to the demand. *E. J. Newborn, Covent Garden and St. Pancras, August 19, 1914.*

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending August 15, is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

In the early part of the week the weather over England was influenced by a large anticyclone, which extended from the Azores region to Germany. Ireland and Scotland were affected to some extent by a depression lying to the north-westward of Scotland, and in those countries the south-westerly winds were occasionally fresh or strong in force, and the weather changeable and showery. After the 10th the anticyclone extended northwards over the entire Kingdom, and fair weather became general, the south-westerly winds being gradually replaced by light breezes from the east or south-east. After the 13th a decided change was brought about by a depression which appeared off our extreme south-west coasts, and by a shallow secondary disturbance which advanced over England from the southward. These systems caused thunderstorms at most places situated in the western and southern portions of the Kingdom, and heavy rain in the South-west of England, and the East and South of Ireland. More than an inch of rain was registered on the 14th in many places —as much as 1.5 inch at Waterford, 1.6 inch at Carrick-on-Suir, and 1.8 inch at Kilkenny and Guernsey. Of the total of 1.76 inch at Guernsey, no less than 1.5 inch fell in fifteen minutes. On the 15th, when a trough of low pressure lay over our southern districts, the wind shifted temporarily to the west in many parts of our western and southern coasts. Local fogs and mists prevailed at times on our north-east and north-west coasts.

THE WEATHER IN WEST HERTS.

Week ending August 19:

Warm, Dry, and Sunny.—The first two days of the past week proved very warm, the highest readings in the thermometer screen being respectively 80° and 81°. Since then the days have been only moderately warm for the time of year. On the one cold night the exposed thermometer fell to within 4° of the freezing-point. The ground is now at about a seasonable temperature at 2 feet deep, and 1° warmer than the average at 1 foot deep. There occurred a slight fall of rain on one day, but throughout the rest of the week the weather remained perfectly dry. No rainwater at all has passed through either of the percolation gauges during the week. The sun shone on an average for 8½ hours a day, which is 2¾ hours a day in excess of the mean duration for August. On one day, however, no sunshine at all was recorded. Calms and light airs have alone prevailed, the direction of the light airs being exclusively from some northerly or easterly point of the compass. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as 11 per cent. *E. M., Berkhamsted, August 19, 1914.*

LAW NOTE.

THE FAILURE OF PLANTOIDS, LTD.

In the Companies Winding-up Division of the High Court on the 11th inst., the statutory first meetings of creditors and contributories were appointed to be held in the matter of the liquidation re Plants Plantoids, Ltd., of 5, Lloyd's Avenue, London, E.C., but in the absence of a quorum of creditors it was decided to leave the estate in the hands of the Official Receiver for administration in the usual manner. A similar resolution was passed at the contributories' meeting.

According to the statement of affairs, the gross liabilities as regards creditors amounted to £6,422 8s. 9d., of which £3,964 12s. 2d. was expected to rank, there being fully-secured creditors of £133 11s. 7d., and contingent claims of £3,398 4s. 6d., of which only £1,086 15s. 9d. was expected to rank for dividend. The net assets were returned at £2,311 8s. 9d., but were entirely absorbed by the claims of debenture bond holders, thus showing a creditors' deficiency of £3,964 12s. 2d. Adding a contributories' deficiency of £6,000, there remained a total deficiency of £9,964 12s. 2d.

In his report and observations upon the case the Official Receiver states that the winding-up order was made on June 9, 1914, on the petition of a creditor presented to the court on May 27. The company was incorporated on November 3, 1911, with a nominal capital of £1,000 in shares of 1s. each, increased in August, 1912, to £11,000 by the creation of 1,000 cumulative preference shares of £10 each, and was promoted by Alleyn to carry on the business of fertiliser and manure manufacturers and merchants. With the exception of the signatories' shares (20 in all) the whole of the original capital of £1,000 was paid for by Mrs. H. M. Alleyn. The first directors were Alleyn and Walter John Curtis, appointed by the articles of association. Philip Ryan and P. Garfield Blake were appointed by the Board on September 3 and October 3, 1912, respectively. Curtis ceased to be a director in October, 1912. Alleyn acted as chairman throughout, and the directors' fees of £100 a year were only paid for six months. Blake acted as manager from November 1, 1912, at a salary of £500 per annum, subsequently reduced to £350, divisible by arrangement between the company and two other companies in the same offices, in which the directors were interested, in proportion to their respective sales. The company commenced trading in March, 1912, when a garden manure in the form of tablets called "Plantoids" was placed on the market, followed by fertilising powders for lawns, etc., the various trade marks relating thereto being registered by the company in the United Kingdom and elsewhere. The company's products were advertised extensively, and to provide for it and other expenses the increased nominal capital of £10,000 was offered to the directors and their friends for subscription. A sum of £5,000 was subscribed and paid for, of which £3,650 was taken up by two of the directors, making the total issued capital £6,000. The results of the first year's trading were stated to have been very satisfactory, a gross profit of £5,255 being shown. This, however, is arrived at before charging the advertising expenditure of £5,621 for the year. For the next seven months ending May 31, 1913, a gross profit of £2,715 was made before charging advertising, £3,678. On June 18, 1913, amounts of £250 and £300 were lent to the company by the Darlington Fencing Co., Ltd., and the Domes of Silence, Ltd., respectively (the two companies referred to as sharing offices) on the security of debentures for £500 each. The total amount outstanding at the date of the receiver's appointment in respect of these two debentures was £606 10s. In July, 1913, a debenture for £2,220 was issued to S. H. Benson, Ltd., as security for an account for advertising amounting to that sum. The company being without funds, partly owing to its capital being locked up in stock, it was unable to continue advertising, and in July, 1913, the directors endeavoured to float a public company called "(New) Plantoids, Ltd.," to take over the business. A prospectus was issued, but owing to the minimum subscription being insufficient the scheme fell through. On August 1, 1913, a debenture giving priority over all existing charges was created in favour of the Domes of Silence, Ltd., for £550, the amount advanced to advertise the prospectus of (New) Plantoids, Ltd. The preliminary expenses in connection with this new company were £1,232 18s. The assets being in jeopardy, and the repayment of the principal moneys being in arrear, the holder of the debenture for £2,220 (who also holds the guarantee of Alleyn to the extent of £1,000) applied to the court for the appointment of a receiver and manager, and on September 10, 1913, Mortimer Lancaster, chartered accountant, of 1, Basinghall Street, London, E.C., was appointed. He was carrying on the business with a view to its sale as a going concern. As the values of the assets appearing in the statement of affairs were estimated on this basis, and show a deficiency to meet the debenture claims, there is no prospect of a surplus from the security for unsecured creditors or shareholders. The fully-secured creditors for £133 11s. 7d. include a claim for £127 16s. 10d. for tableting the company's materials in respect of which a lien is claimed on machinery and raw materials belonging to the company valued at £335. The unsecured creditors for £2,877 16s. 5d. consist of claims amounting to £1,737 8s. 5d., for tin boxes manufactured for the company under contract, but not delivered; printing and stationery, £378 5s. 10d.; directors' fees, £138 11s. 9d.; advertising, £93 12s. 6d.; goods supplied, £510 15s. 4d.; and a few small claims in respect of carriage, etc.

The failure of the company is attributed by the secretary to lack of working capital caused by over-stocking.

Answers to Correspondents

Anthracite Coal: *J. W. B.* You ask if anthracite coal would burn a saddle boiler out quicker than coke. Our experience leads us to say that the reverse is the case, inasmuch as coke will burn into clinkers while anthracite will not make clinkers to any measurable extent. Moreover, anthracite coal is more economical in the heating of greenhouses than coke, labour being saved in attending to the fires where anthracite coal is used.

Clay for Puddling: *Plan.* Ordinary London clay is well adapted for the bottom and sides of ponds and lakes to retain the water.

Electricity and Plant Growth: *J. H.* The application of electricity to the forcing and cultivation of plants is as yet in the experimental stage. An account of the most recent investigations will be found in the *Gardeners' Chronicle*, April 11, 1914, p. 245, and April 18, 1914, p. 271.

Gooseberry Mildew: *J. E.* The plants are attacked with English mildew, which will do no great amount of harm to them or to the crop.

Grapes: *F. G.* There is no disease of any kind present. The defect is entirely connected with the cultivation.

Lilium auratum Unhealthy: *W. G. B.* The unsatisfactory condition of the plants is not due to disease, and is the result of some wrong cultural treatment. The bulbs might be planted another year, as they are free from disease.

Names of Fruits: *G. R. Bligh.* 1, Early Harvest; 2, Wadhurst Pippin; 3, Annie Elizabeth; 4, Ecklinville Seedling; 5, Lord Suffield; 6, Too small and badly grown to recognise.—*H. C. D.* We cannot undertake to name such badly grown, small and shrivelled fruit.—*M. B. G. A.* The Nectarines were smashed in the post. The variety resembles Lord Napier.

Names of Plants: *H. G. P.* Hypericum calycinum, Veronica Traversii, Sedum rupestre, S. spurium, Tritonia crocosmiflora, Thuya plicata.—*E. F.* Helenium Bigelovii.—*Blordaem, Moulton Paddocks.* Eryngium amethystinum.—*A. J. C.* Ecballium Elaterium, squirting Cucumber.—*Dixon and Sons.* Saponaria Vaccaria.—*J. H. Chilton.* Grasses without inflorescences cannot be identified. *Dublin.* 1. Rose Sénateur Vaisse; 2, unnamed hybrid Noisette Rose; 3, Clematis Jackmannii; 4, C. Gipsy Queen; 5, Raphiolepis ovata; 6, Spiraea japonica var. alba; 7, S. japonica.

Odontoglossum Uro-Skinneri: *Dummy.* The damage to the flower-spike, which you state is one of three, seems to be due to a check, and may have been caused, as you state, through the tips of the roots having been eaten by insects. It is probable, also, that the intermediate house in which you grow the plants is too warm in summer, and too moist. The Mexican and Guatemalan species require a drier atmosphere, especially during the flowering season, than the Colombian Odontoglossums. But probably if the plant had been placed on a shelf, or suspended near to the glass of the roof, if no cooler position were available, it would have done better. In the early days of Orchid-growing Orchidists recognised the need of a house ranging in temperature and in the density of its atmosphere between the cool and intermediate houses. It was called the Mexican house, and when well managed the results with the species grown in it, including Odontoglossum grande and O. Uro-Skinneri, were better and more lasting than they are under the present system. Seeing that you have no choice between the cool-house and Cattleya house, we advise you to select in the cool-house for your plant a well-ventilated place near to the roof-glass for the summer, and if the cool-house is to be kept at the lowest temperature, to return it to the cooler part of the intermediate house in winter. Odontoglossum grande should be treated similarly to O. Uro-Skinneri, and when growth is fully completed all Odontoglossums of this section should be kept rather dry—in fact, treated more like cool-house Oncidiums.

Peach Lord Palmerston: *W. B.* The fruits are not attacked by either fungous or insect pests. Their unsatisfactory condition is due to some wrong cultural treatment, which only those on the spot can determine.

Plans: *E. L.* We do not know any London museum where plans of landscape gardening are exhibited. There are diagrams for planting in such works as *The Art and Craft of Landscape Gardening*, by T. H. Mawson, 50s. net, postage 1s. extra; *Landscape Gardening*, by Humphrey Repton, 13s., post free; and *The Forester*, by Brown and Nisbet, price 42s. 6d., post free, from our Publishing Department.

Planting 18 Acres of Forest Trees: *Plan.* Any good work on forestry will furnish the information you require. Pitting would cost from 1s. 6d. to 2s. 6d. per 100, placing the trees at 3 feet apart. The cost of the plants will be found in tree nurserymen's catalogues. Generally the cost of forming a plantation such as you describe would be £6 per acre, but the nature of the soil, rate of wages paid in the district, and other details will affect the price.

Propagation of Genista: *I. N., Ireland.* Your query is somewhat indefinite, though by "common yellow Genista" we presume you mean the greenhouse Cytisus racemosus, or canariensis, which is propagated by cuttings of the young growths taken as soon as they are about 2 inches long. They should be inserted in a mixture of three parts sand to one of loam, and should be rooted in a house having a temperature of 60°, with a bottom-heat some few degrees higher. Cuttings of well-ripened wood may also be rooted in the autumn, taking care to choose ripe shoots with a "heel" of old wood attached. They should be grown in a cold house or frame during the winter, but must not be allowed to become frozen, excessively wet, or too dry. The following February they should be brought into bottom heat, when roots will soon form. The hardy Brooms (Cytisus and Genista) are easily raised from seeds, which are produced freely.

Roses Diseased: *A. B.* By black spot we presume you mean the summer stage of Phragmidium subcorticatum. Affected plants should be drenched with a solution of sulphate of copper during the winter, and fallen leaves buried or swept up and burnt.

Tomato Diseased: *S. C.* The disease is Tomato leaf rust, caused by the fungus Cladosporium fulvum. If fruit is present spray the plants with liver of sulphur every other day.

Turf with Brown Patches: *G. H.* Your letter does not furnish sufficient particulars as to the treatment the grass has received, whether, for instance, you have dressed the lawn heavily with a concentrated fertiliser. The appearance of the sod sent suggests that the trouble is due to drought, for the grass is not diseased. You must remember that in certain districts the weather in early summer was abnormally dry. We know of cases where grass even now is quite brown from the effects of drought. Give the turf a good soaking with water, and, as a fillip to growth, you might top-dress it first with a little sulphate of ammonia, at the rate of about 1 ounce to each square yard.

Communications Received.—F. H. D.—W. E.—Dorset Gardener—H. L. R.—E. F. P.—C. R.—W. S.—P. S.—G. H.—H. G. P.—Y. Z.—J. W. B.—I. H. C.—E. F.—West Riding—J. E.—A. J. E.—R. W.—E. B.—S. L. B.—N. P. N.—W. S.—E. P.—V. N. G.—W. B.—A. R. S.—Z. W. X.—W. H. Ward—E. T. G.—C. H.—J. M. C.—A. I.—R. P. B.—R. A. M.—H. B.

THE
Gardeners' Chronicle
No. 1,444—SATURDAY, AUGUST 29, 1914.

CONTENTS.

Allotment holders, suggestions for 164
Appointments 163
Brown, Mr. N. E., retirement of 163
Cultivation of Cauliflowers in Normandy 163
Dutch Bulbs 162
Farmers' horses 163
Fasciated Lilium .. 163
Flowers that follow the sun 165
Food supplies, care of the 163
French varieties of Apple and Plum, the best 164
Fruit crops, remarks on the 166
Fruit, method of preserving and drying 164, 165
Gardeners respond to the call 162
Home-grown foodstuffs 163
Horticulture and the war 166
Melons, R.H.S. awards to 164
Miltonia vexillaria .. 162
Obituary—
  Mansfield, Thomas .. 167
  Oubridge, Henry Robert 167
Orchid notes and gleanings—
  Brasso-Cattleya Ilene 158
  Cirrhopetalum pulchrum 158
Pancratium illyricum .. 165
Patriotism, details of .. 162
R.H.S. Bulb Show, 1915 164
Societies—
  National Dahlia .. 162
Southend public parks and gardens 157
Spinach substitutes .. 165
Strawberries at Upton, Hampshire 158
Sugar Beet, the cultivation of 168
Trees and shrubs—
  Buddleia nivea .. 160
  Desfontainea spinosa 160
Vegetable foodstuffs, prices of 164
Week's work, the—
  Flower garden, the .. 160
  "French" garden, the 161
  Fruits under glass .. 160
  Hardy fruit garden, the 161
  Kitchen garden, the 161
  Orchid houses, the .. 160
  Plants under glass .. 161

ILLUSTRATIONS.

Chalkwell Park, Westcliff, views at 157, 158, 159
Gaillardia flowers, showing their position in relation to sunshine 165, 166
Miltonia vexillaria Laelia Sander. (Supplementary Illustration.)

PUBLIC PARKS AND GARDENS OF SOUTHEND.

SOUTHEND, which includes Westcliff-on-Sea and Leigh-on-Sea, may be classed with the most progressive boroughs. The authorities have not been slow to take every advantage of its amenities with a view to making the place as attractive as possible. It is not our intention to describe its tramways, electric lighting, drainage (which is said to be the most perfect in the country), or other municipal enterprises undertaken for the comfort of residents and visitors, but some particulars of the public parks and gardens may be of interest.

The town is for the most part new, and possesses little of historical interest. It is true that the parish church of Prittlewell, built in the reign of Stephen, is one of the finest and best preserved edifices of its period; but Prittlewell was nothing more than an agricultural parish until its south end, which stretched along the estuary of the Thames, and was thus, so to speak, washed by the waters of the North Sea, became a resort for holiday-makers. It is only in recent years that Southend has grown from a hamlet to a great seaside resort, and when we state that the population in 1854 was only 2,500 and is now estimated at over 80,000, some idea may be gained of the manner in which the town has increased.

Of its public gardens and open spaces, the oldest is the escarpment of the cliffs which extend from the pierhead for a mile or so to Westcliff. Not much has been done to alter the natural character of the undulating and wooded ground, and although the cliffs are very beautiful we think that an opportunity is lost in not planting them to greater advantage. They offer splendid opportunities for planting, not with beds of formal design, but as "wild" gardens of various forms. Worked into a natural site of this character, a variety of ornamental shrubs might well take the place of many of the commoner Thorns and other wild trees. Whatever is done in this direction should include the sweeping away at the base of the cliffs of the shacks and hovels of the cosmopolitan crowd of vendors. Along the foot of the cliffs a series of large open spaces has been laid out, many of them planted with a variety of sea-loving shrubs and flowering plants, whilst those at the Leigh end contain some very pretty rock gardens, which are always attractive, even in winter. On the top of the cliffs, near the bandstand, there is a charming, though small, open space forming a model flower garden with a fountain and pool in the centre planted with Water Lilies, and trailing masses of plants along the side in stone-work, combining a rock and water garden. The outskirts are planted with hardy herbaceous flowers in great wealth and variety, and there are also one or two small rockeries. To the east of the town there is a large open space, known as South Church Park, where provision is made for games of all kinds.

The chief park is the one at Westcliff, known as Chalkwell Park, of which the glory is the Rose garden, one of the finest public rosaries in the country. Chalkwell Park was acquired by the Corporation in 1903 for the sum of £20,000, and embraces 26½ acres of land, including the old Hall, now used as a refreshment buffet and residence for the park-keeper. The larger part of the land consists of playing fields. The illustration in fig. 63 shows the "flower garden," a quiet and beautiful retreat, affording a magnificent view of the Thames estuary. It contains numerous flower beds and borders, conifers in variety, including pyramidal and columnar Yews, Cypresses, and Sequoia gigantea, also Hollies, Lauras nobilis, an old Cedrus Libani, and numerous other trees. In one corner of the pleasure grounds is a horse-shoe border with Melianthus major at the back, a broad band of bronze Coleus, next to this a line of pink Begonia semperflorens and an edge of blue Lobelia compacta, the whole bordered with Alyssum maritimum. This half encircles a round bed planted with orange-coloured and scarlet Begonias edged with blue Lobelia and interspersed with Grevillea robusta and Dacytilis glomerata. There are numerous other beds on the wide lawn and attractive borders of hardy herbaceous flowers on the outskirts, whilst the old character of the gardens is seen in a hedge of espalier Pear trees, this year laden with fruit. At the end of the espalier Pear trees is the Rose garden (see fig. 64), which was opened in 1909. Its area is about half an acre, and it is approached through gateways formed by arches covered with Roses. The garden is enclosed by hedges of Roses, formed of the varieties Gruss an Teplitz and W. Allen Richardson; each hedge is about one hundred yards long, and at one end is a border of R. rugosa. These hedges of Roses are astonishingly beautiful; indeed, we have never seen a more magnificent spectacle than the one formed of William Allen Richardson. The plants of Gruss an Teplitz form great bushes—one might almost say trees—and were a perfect picture this season when in bloom. The garden is broken up by a series of beds with pathways converging to archways in the centre, a portion of which may be seen in fig. 65. The large pillar variety in the foreground of the illustration is American Pillar, which was planted in the autumn of 1910. It has formed shoots of immense thickness, and the park superintendent, Mr. Little, layered one of the stronger branches, with the result

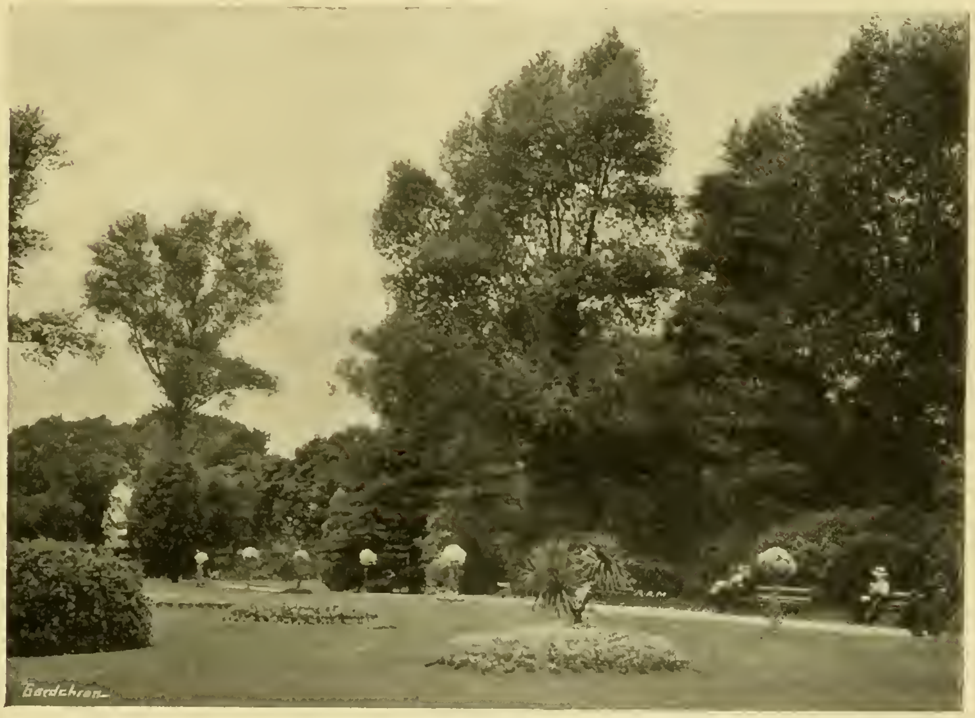


Fig. 63.—View in Chalkwell Park, Westcliff.

that the plant now covers a considerable space. The plant was even finer last year than this, and produced an abundance of pink blooms in great bunches. Other varieties that do exceedingly well on pillars are Dorothy Perkins, René André, Hiawatha, Rubens, White Dorothy, Goldfinch, Excelsa, Tausendschön, Jersey Beauty, Albéric Barbier, Tea Rambler, Mme. d'Arblay, Psyche, Hélène, and Veilchenblau—the blue Rose—which we had always regarded as a poor, washy magenta colour until we saw it flowering at Chalkwell Park last year, when it was something to be admired. It must be remembered that the soil of the district is eminently suited to Roses, as are the Essex clays generally. In gardens all over the borough Roses appear to grow with the greatest freedom, and we have often stopped to admire them in the front gardens of the villas. Altogether there are 1,500 Roses in this garden, of which the following varieties do exceptionally well :—Mme. Abel Chatenay, Pharisaër, Betty, G. C. Waud, Duchess of Wellington, Marquise de Sinéty, Mme. Léon Pain, Lady Ashtown, General McArthur, Joseph Hill, Florence Pemberton, Le Progrès, Mrs. Aaron Ward, Paul Lédé, Mme. Slean, Lady Battersea, Irish Elegance, Mrs. Walter Easlea, Mme. Mélanie Soupert, Mme. Jules Grolez, Hugh Dickson, Caroline Testout, Dean Hole, Lady Pirrie, Mme. Segond Weber, Mme. Ravary, Harry Kirk, Prince de Bulgarie, Mrs. Herbert Stevens, also such novelties as Mme. E. Edouard Herriot and Rayon d'Or. Several of the beds and borders are edged with dwarf Polyantha varieties, including Orleans Rose, Jessie—which does remarkably well—Petit Constant and Frau Cécile Walter. When the garden was prepared a considerable quantity of burnt earth was mixed with the soil, and farmyard manure was incorporated liberally. Mr. Little believes in hard pruning, and it is surprising how well the plants do and how free they are from mildew. For a specific for this pest Cyllin soft soap mixed with a little green sulphur is used. The plants are well sprayed at frequent intervals to combat aphis. Mr. Little, however, would be the first to admit that the success is not all due to him, for Mr. Walter Easlea, the well-known Rose specialist of the adjoining parish of Eastwood, has taken an active interest in this Rose garden.

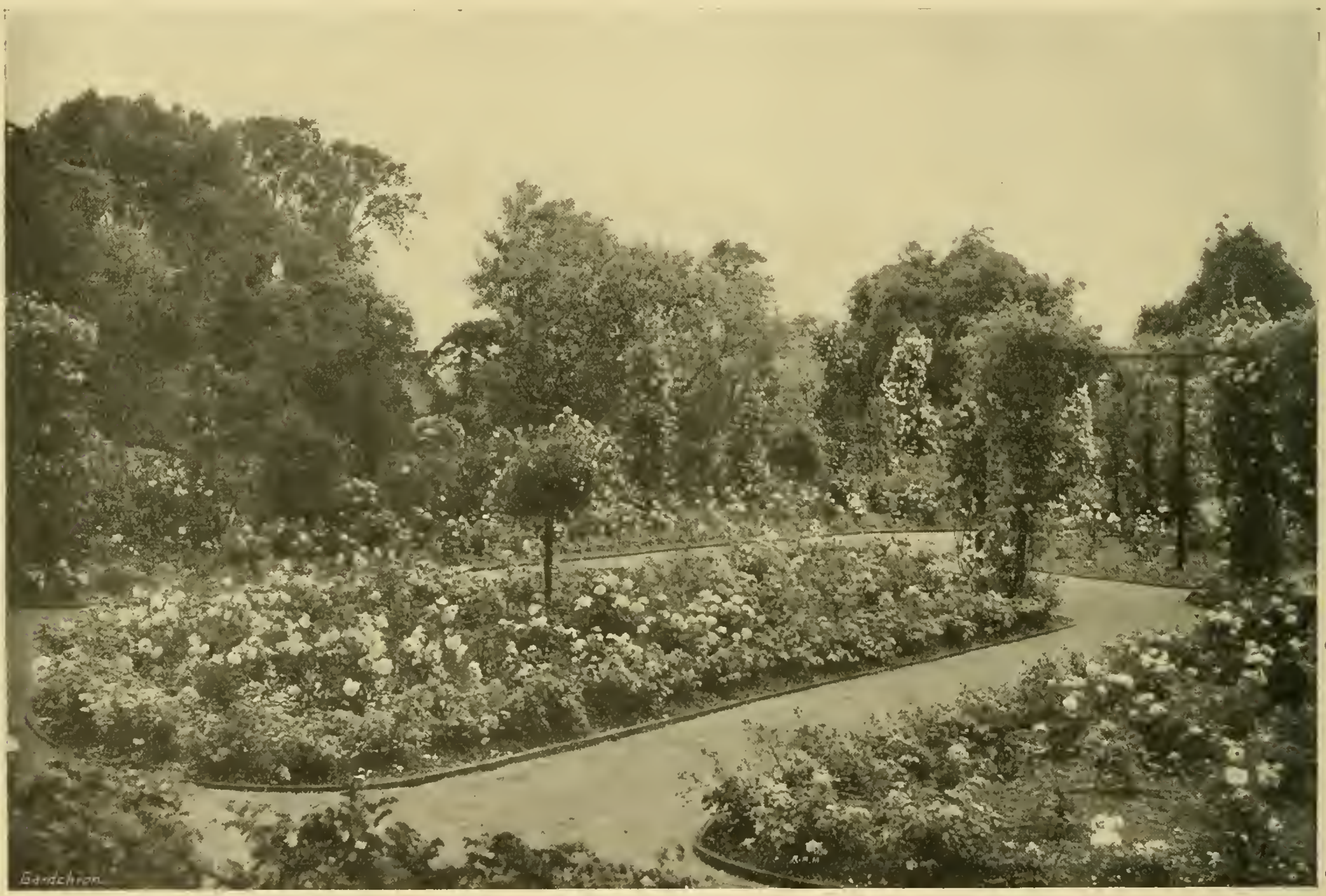


Fig. 64.—THE ROSE GARDEN AT CHALKWELL PARK, WESTCLIFF.

Although the parks at Southchurch and Chalkwell Hall are the principal open spaces, there are other public recreation grounds in various parts of the borough, and quite recently the corporation purchased two large areas of land in outlying districts with a view to forming them into public parks in the future, for the builder is encroaching rapidly on every side.

ORCHID NOTES AND GLEANINGS.

BRASSO-CATTLEYA ILENE.

Several plants of this handsome and fragrant hybrid between Brasso-Cattleya Madame Chas. Maron and Cattleya Dowiana have flowered lately at Messrs. Flory and Black's Orchid Nursery, Slough. Brasso-Cattleya Madame Chas. Maron is derived from Brassavola Digbyana and Cattleya Warscewiczii, the new element introduced into B.-C. Ilene being Cattleya Dowiana. Approximately the constituents of B.-C. Ilene, therefore, would be similar to B.-C. heatonensis (B. Digbyana × C. Hardyana), but the result is the production of a more Cattleya-like flower, with a finely rounded lip with short fringe at the margin. Each seedling which has flowered varies in tint, but the ground colour of all is yellow, the rose tint varying in shade.

CIRRHOPETALUM PULCHRUM.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, continue to import Orchids in quantity, and have always interesting and rare species of the "botanical" class in bloom, including Bulbophyllums and Cirrhopetalums. Cirrhopetalum pulchrum flowers at intervals throughout the greater part of the year. The fine umbels of flowers are cream-white blotched with dark rose, the dorsal sepals being furnished with stout, bristle-like continuations. The species is one of the few of the genus which have received the First-class Certificate of the Royal Horticultural Society.

STRAWBERRIES AT UPTON, HAMPSHIRE.

The Strawberry stocks being found in a worn-out condition I decided to plant a new bed with freshly acquired plants. The soil, a fairly good loam slightly on the heavy side but full of flint stones with occasional seams of chalk in the subsoil, was trenched about 3 feet deep and well manured in the previous autumn (1912) and cropped with early Peas (Early Giant and Duchess of York) with Spinach in between. These were cleared off in July, 1913. A good coating of wood ashes, a light dressing of well-decayed stable manure and a sprinkling of Grubicide was forked in. In order to obtain good results I ordered in July plants in small 60's of fourteen varieties, including some old and well-tried sorts, some of the newer ones, and possibly my experiences with them may be of help to many who at the present time are contemplating the planting of new beds. The plants arrived towards the end of August, and were immediately planted in rows 2 feet 6 inches apart, and each plant was allowed 2 feet in the rows, with the exception of Leader, which, on account of its compact habit, was planted 20 inches apart. The rows, in length about 110 feet, ran nearly due north and south, and one side was shaded from the early morning sun by a tall hedge, otherwise the bed was exposed to full sunlight. The plants quickly took a good hold of the soil and during the winter were much admired, every plant doing well. The winter season was very wet, but this period terminated on April 9, and afterwards there occurred a drought which lasted until July 5. The supply of water being scanty scarcely sufficed for spring-planted crops, so that artificial watering was out of the question and undoubtedly the berries suffered in point of size in consequence. The bed was strawed with clean straw early in May, and netted in almost immediately afterwards. Frosts during the flowering period destroyed a few blooms, but frosts of 9° and 10° on May 26 and 27, which cut Potatos and Beans and rendered some of the low-lying gardens quite desolate, had no ill-effects on the Strawberries, possibly the nets serving as a protection. The first fruits, picked on June 3, were gathered from King George V., followed two days later by Royal Sovereign. Unfortunately, the former variety was planted under the shade of the hedge before mentioned, otherwise an earlier crop would have been available. The task of selecting the best varieties proved somewhat difficult, and my impressions of the varieties as they grew here are given in alphabetical order, as it would be invidious to arrange them in order or supposed merit; in fact, in the words of my employer, "They are all good." The absence of rain reduced the spoiled berries to a minimum, and the large amount of sunshine gave brilliant colouring and excellent flavour, amply compensating for the drought which caused the later fruit to be somewhat lacking in size. Bedford Champion proved to be a very handsome Strawberry of fine shape but sadly deficient in flavour and very difficult to remove from its stalk, which militates against it as a jam fruit. The plants were of a compact habit, but the fruit was not over large. Fillbasket, well known as an exceedingly heavy cropper, has a pointed berry of good and distinct flavour, but it is very soft, and in a wet season would suffer on that account. Givon's Late Prolific, still one of the best late Strawberries, is a large, dark, handsome fruit of a pointed wedge shape, which crops well, and certainly must be retained. International (Laxton) is the finest among the new kinds, producing the largest fruits, a heavy cropper of splendid flavour and of a lovely glowing scarlet colour; the calyx stands out in a distinct manner, rendering it very attractive when dished up. The foliage is rather taller than some other varieties, but it is extremely vigorous, and I intend to increase my stock of this variety. King George V. (Laxton), as I remarked before, is the earliest variety to ripen, about a week ahead of Royal Sovereign under equal conditions, which it somewhat resembles, though the fruits are smaller and rather less conical. I intend trying this variety for forcing. Leader, an older sort of a dark colour, is a tremendous cropper of fair flavour. The berries are very uniform in shape, and the colour and general appearance leave little to be desired, but the fruit is rather soft. Its compact habit permits closer planting than is advisable with many other varieties. Maincrop (Laxton) was the heaviest cropper among the newer varieties; the fruits are large and very handsome, being only slightly inferior to International in size and flavour, and of similar colour to that variety, but a little flatter in shape. Olympia (Laxton) is a very dark conical variety of medium size and good flavour, but rather a weak grower here. Although a late cropper, it is not so late as Givon's Late Prolific or Utility, and will not bear comparison with them either in the appearance of the berries or as a cropper. Rival (Laxton) is a handsome fruit of cockscomb shape, and of a good bright colour. Royal Sovereign is much too

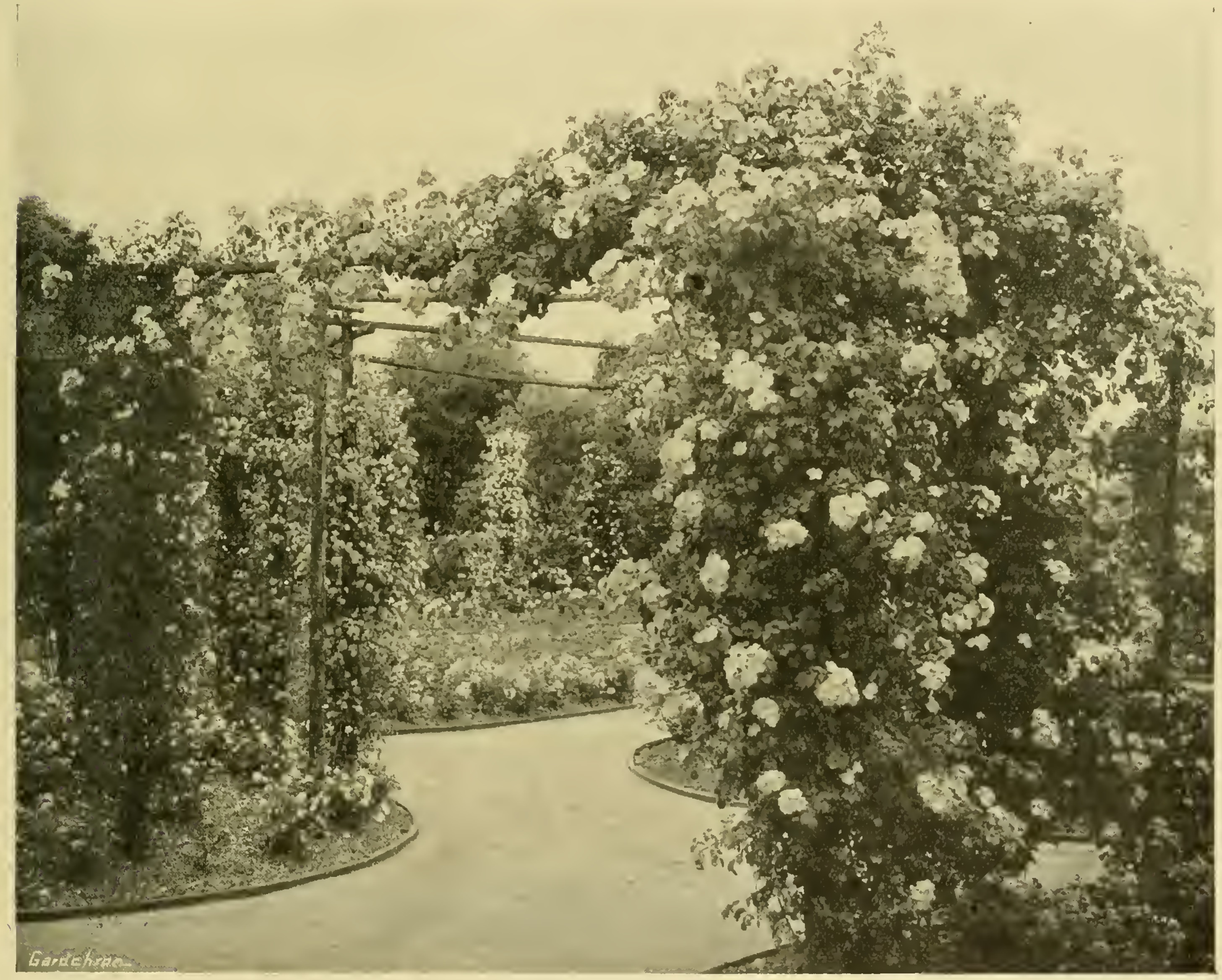


FIG. 65.—ROSE AMERICAN PILLAR IN THE PUBLIC ROSARY AT WESTCLIFF-ON-SEA.
(See p. 157.)

well known to need any eulogium from me. It is the standard variety, and it appears to succed everywhere and on all kinds of soil. The Bedford is a handsome, rounded Strawberry, fair cropper, good size, rather pale in colour, of good flavour, and compact in habit. The Earl (Laxton), said to be an improved Vicomtesse Hericart de Thury, proved to be a handsome flat Strawberry of a darkish red colour, and a good cropper. The Queen (Laxton), light red in colour, roundish in shape, somewhat resembles the Bedford. Utility (Laxton), the latest of all, and also quite the best flavoured, fruit somewhat resembling Givon's Late Prolific, but firmer, later and better flavoured, though not so heavy a cropper, shall be given an extended trial next year.

These are the results obtained on ground in this district and season. In many cases the descriptions I have given differ from those of the catalogue, but few things are more fickle than Strawberries, and in other conditions and soils the results might be totally different. *F. A. Edwards, Upton Gardens, Alresford, Hants.*

TREES AND SHRUBS.

BUDDLEIA NIVEA.

This handsome new Chinese species is a decided acquisition for the garden, especially for positions where large, bold effects are required. It is a strongly-growing, upright plant, which promises to reach to 12 feet or more in height. Two-year-old plants with us are upwards of 8 feet high on poor, sandy soil, which seems to suit them as perfectly as a richer loam. The stems are thick and stout, with rather long internodes, and are covered with a dense, white wool or tomentum, which is very conspicuous at a considerable distance. The lanceolate leaves are opposite and decussate, and are 10 inches to 12 inches long by 4 inches across at the widest part. The edges are coarsely serrated. The upper surfaces are glabrous and bright grass-green in colour, while the undersides are covered with a white tomentum rather less dense than that on the stems. The flowers are borne in upright, slender spikes on the ends of the branches; they are individually very small, and do not last long. The colour is an indefinite pinkish-lilac shade, and as a flowering plant this Buddleia is of little worth, its chief beauty being its conspicuous stems and graceful foliage. It would make a handsome bedding plant where a sub-tropical effect is required, especially if the plants were cut down each spring after they were established. They would make from 6 feet to 8 feet of growth during the summer, and the white stems and handsome foliage would form a striking feature for some months. The plant is propagated by cuttings prepared from thoroughly ripened wood. *J. Clark, Bagshot, Surrey.*

DESFONTAINEA SPINOSA.

This handsome Andean evergreen shrub is now at the height of its beauty. Here, on the Scottish western littoral, it might almost be described as a perpetual bloomer, for blooms are so persistent they hang on the tree until well on in the New Year. The large, waxy flowers are of much substance, and well withstand the stress of the gales which blow in from the sea.

They are 1 inch long, tubular, bright scarlet, very showy, and freely produced; indeed, a well-flowered bush is a conspicuous feature in any garden. The foliage and general habit of the shrub resemble those of the Holly.

Nicholson, in the *Dictionary of Gardening*, gives the height as 3 feet; in the gardens here there is a specimen 6 feet high and as much through. This would be higher but for the top being clipped to allow of a view over the Firth. *Fred. W. Jeffery, Abbey Hill, Argyll.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Cypripedium.—Certain Cypripediums, including C. Charlesworthii, C. Fairrieanum, and its numerous hybrids, are on the point of flowering, which is earlier than usual, owing to the fine summer. Where it is desirable to retard them remove the plants to a cooler house, such as that containing the Odontoglossums. A cooler treatment may tend slightly to diminish the size of the flowers, especially in the case of C. Fairrieanum, C. × Arthurianum, C. × Sibyl, and other hybrids of this section, but it will develop the best colour characteristics of the varieties. Many of the late autumn and winter-flowering varieties are in full growth, and such plants as are pot-bound should be watered about once a week with weak liquid cow-manure. Constant observation is necessary to protect the young growths of Cypripediums from thrips, as trees and plants in the open are thickly infested with these pests. The only remedy and preventive is to spray the plants and vaporise the house at regular intervals.

Deciduous Dendrobiums.—Many of the early-flowering varieties of Dendrobiums are completing their growths, and should be placed in drier and more airy positions, where they will be exposed to the sunlight. Syringe them once a day to keep down attacks of red spider. Should there be any signs of scale or other insect pests, sponge the growth before the plants are removed to their resting quarters.

Coelogyne cristata.—Plants of C. cristata, and more especially C. c. alba, are liable to become shrivelled before the new growths commence to produce roots. In this case, water the soil liberally, and syringe the plants daily to enable the pseudo-bulbs to regain their normal state as soon as possible after the roots become active. Damp the stages frequently in dry weather, and take every precaution to promote a humid atmosphere. The varieties of C. cristata suffer very considerably when the houses are vaporised, and recently some large specimens here were made almost leafless by the effects of the vaporiser. A day or two after the fumigation has been done, the foliage commences to show signs of black spotting, which ultimately destroys the leaves and renders the plants unsightly. Any necessary cleaning of Coelogynes is best accomplished by sponging, and it is desirable to remove the plants from houses that are being vaporised.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Bulbs.—Although the bulb catalogues are being issued as usual, there is some doubt whether full supplies will be available from the Continent this year. Plant out, as soon as possible, those bulbs which have been dried and stored. Daffodils that have been grown in sandy loam, in which the clumps increase rapidly, can be taken up, and the largest bulbs replanted for flowering, the smaller ones to be planted thinly for one year in the reserve garden. All the large trumpet varieties may be treated in this way, but only a portion in any one season. Effective varieties for planting in grass include Sir Watkin, Emperor, Empress, Horsefieldii, and Victoria, all of which are moderate in price. If the land is very poor, or of an inert, clayey nature, stations for planting can be made by first removing the turf and then digging holes 8 or 9 inches square and about the same in depth, discarding the old soil and replacing it with better compost, adding a sprinkling of bone meal and old mortar rubble. Make this as firm as possible, and if the land is naturally wet, plant the bulbs in little mounds, so that they are just above the water-logged surface. As the fresh earth settles down the mounds will disappear and the bulbs will flourish and increase for many years. In planting arrange each variety in as large, bold, and irregular groups as the size of ground and situation will admit, for this method is better than indiscriminately mixing them.

Spring-bedding Plants.—Examine the seedling Wallflowers and Forget-me-Nots, and if touching one another lift them and replant them, or at least remove the alternate plants. Spring-bedding plants should be grown on poor, hard ground, as then the growth will be firm and stocky. Polyanthus, Verbascum, Aubrietia, Alyssum, and other plants require similar treatment.

Chrysanthemums.—Continue to disbud plants of the later-flowering section of summer Chrysanthemums, and see that the flowering stems are well staked and tied, otherwise heavy rains and high winds will break them.

Perennial Asters.—Michaelmas Daisies require frequent attention, for already plants of the early section are commencing to flower. The plants are now top-heavy, and the shoots must be secured to stakes. In doing this work it is advisable to loop judiciously a band or two of string into and amongst the permanent stakes.

Herbaceous Borders.—This is the best time to propagate hardy border plants that have ceased flowering, or any which show young growths at the base, planting the new stock in the reserve garden. Cuttings can be rooted in a frame, exposing them to the sunshine, and syringing the growths frequently; the condensed moisture on the glass will provide sufficient shade. Cuttings of half-ripened growths of such hardy shrubs as Hydrangea arborescens, H. grandiflora, H. paniculata, Veronica Traversii, V. Kirkii, Abutilon vitifolium, and others of a similar nature can be increased from cuttings treated in this manner.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Exhausted Fruit Borders.—Vines, Peaches, and other fruit trees, growing in borders, the soil of which is exhausted, become unhealthy and fail to give satisfactory crops. Such borders should be renovated. Take out a trench about 4ft. wide, removing the soil down to the drainage, commencing at the front of the trees, but not approaching nearer to the wall or stem of the tree than about four or five feet. Guard against damaging the roots, and sever with a clean cut any roots that become injured or need shortening. Prepare fresh compost with turfy loam, moderately enriched with crushed bones, dry, well-decayed cow-dung, and lime rubble. In shortening the thick roots, cut close back to a fibrous one, and, as the trench is re-filled, arrange the roots regularly apart, placing them five or six inches higher than before, to allow of the soil settling, when they will be at their proper level. After five or six days, the soil will have settled, and the border may then be well soaked with soft water, made tepid. It is too early to do this work yet, but not too soon to make preparations, so that in October, or earlier, if the condition of the trees permit, it may be done expeditiously. When the borders are attended to early in the autumn there is time for the roots to become re-established before the spring, and the trees start into growth early, so that no great check results in the following summer.

Cucumbers.—Plants intended for winter cropping must receive unremitting attention, and be grown in a temperature at night not lower than 60° to 65°. As soon as the plants are established, and the roots growing freely, stop the leading shoots, to induce laterals to form, so that the trellis-work may be well furnished with growth before the winter. This is an important matter, for, without a plentiful supply of firm, healthy growth—which cannot be produced by the aid of artificial heat during winter—plants will not crop satisfactorily. Water the roots only when the soil is dry, and even then not to excess, for the object is to obtain short-jointed, firm growth. Close the ventilators early in the afternoons of bright sunny days, to catch the sun's warmth, but there will be a danger of the leaves scalding if the houses are closed too early. Should mildew appear, sprinkle flowers of sulphur over the leaves and keep down attacks of green fly by light fumigations with tobacco. Do not wet the hot-water pipes, as steam in the house favours rust disease, but maintain a moist atmosphere by spraying the plants overhead and keep the evaporating troughs well filled with water. The plants will not need manure until they are carrying a normal crop of fruit.

FIGS.—Early and second early houses should be freely ventilated both by day and night to favour the ripening of the shoots, which should be completed by the middle or end of September. Syringe the trees thoroughly at least once a day; in the morning for preference. Although the soil in the borders must not be allowed to become excessively dry, water should be afforded with extra care during the next two months, keeping the soil on the dry rather than on the wet side.

PLANTS UNDER GLASS.

By C. H. COOK, Gardener to the Earl of DERBY, Knowsley Hall, Lancashire.

CYCLAMEN.—The earliest of these plants are established in their pots. Remove all the flowers, keep the plants shaded and close to the roof-glass, dust between the pots with soot, and water the roots with weak liquid manure. On bright days, admit air freely, and syringe the plants early in the afternoons, closing the frame afterwards. Later, a little air may be admitted to the frame in the evening, and subsequently the lights may be removed at night in fine weather, to be replaced in the morning. Should thrips or green fly infest the plants, fumigate them immediately. Old corms that were started into growth some time previously are growing freely, and should be repotted into receptacles 7 inches in diameter, and treated as were those of the earlier batches. Two-year-old plants produce large numbers of flowers, but the individual blooms are usually small. Seeds may be sown from this date until the end of October, and again in February and March. Use well-drained pans filled with light, sandy soil; sow the seeds ¼ inch deep and ½ inch apart. Cover the seed pan with a sheet of glass and paper, and germinate the seeds in a temperature of 55° to 60°, keeping the soil and surroundings uniformly moist. The seeds are sometimes irregular in germinating, therefore the seed-pan should not be discarded until long after the first seedlings are pricked off.

EUPHORBIA (POINSETTIA).—Established plants may be exposed fully to the sunshine. Place the plants in a cold pit or frame, and admit air freely to harden the shoots. It will assist in keeping the foliage healthy if the watering is done with extreme care, the plants syringed daily, and the roots afforded weak stimulants when the pots are filled. Re-pot late rooted plants into 5-inch pots, and grow them in a closed frame until re-established. Plants of E. jacquiniaeflora do not require further stopping, and may be fed with weak liquid manure and soot water.

TREE CARNATIONS.—In gardens in northern districts it is advisable to house Carnations now on account of the heavy night dews, which destroy the bloom of the foliage. Cleanse the house ready for their accommodation, remove all decayed foliage from the plants, wash the pots, and stand them on stages formed of boards or shingle. On bright days admit plenty of air, for ventilation, accompanied by a moderately high temperature, will help to ripen the growths and aid in the production of better flowers. It will not injure the plants if those showing a tendency to flower are allowed to bloom. The condition of the plant must be taken into consideration with reference to feeding. Plants that have filled their pots with roots should be fed with a rich organic food, which has a more lasting effect than a chemical fertiliser. Spraying should be done early in the day, so that the foliage may become dry before night. Set aside good healthy specimens as stock for propagating purposes, preferably autumn-rooted plants. It is a good plan to root the cuttings the third week in October, and establish them in small pots before the winter. Two thousand plants which we rooted in this way last year are decidedly better than others rooted in January.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to Lady NORTHCOTE, Eastwell Park, Kent.

MORELLO CHERRIES.—The crop of Morello Cherries was very satisfactory. The trees seem to flourish in nearly all situations, whether trained on walls or grown in the open as standards and bushes. Morello Cherries are very hardy, and may therefore be planted in exposed situations on the north or north-east sides of paths, which are unsuitable for the majority of fruits. Where wall-space is limited the trees can be equally well grown as bushes or pyramids, but their development is slower in the open, as it is not advisable to retain the shoots their full length, but to pinch them to three or four leaves. Pinch the first lateral growth to one leaf, and remove entirely any other shoots that develop from this. Established trees on north walls are capable of carrying the fruit until late in the season, and if it is desired to hang as long as possible the ground must be kept uniformly moist. Thin the crop before the fruits ripen, and use the thinnings for cooking. Watch the fruits that are left on the tree, and directly they show signs of shrivelling gather them immediately, or they will deteriorate. Do not feed the roots whilst the fruit is hanging, but after the crop is gathered, water with liquid manure.

PRUNING THE MORELLO CHERRY.—Pruning should be practised as soon as the fruit has been gathered, and the method should be entirely different from that adopted for dessert varieties. Remove old wood that has fruited, unless it is required for furnishing the tree, and train in sufficient of the young shoots to cover the wall-space. If the trees have been disbudded and the shoots trained moderately thinly the new growth will be firm and clean, such as may be expected to produce excellent fruit the following season. Do not interfere with the main branches, unless any have become unhealthy, when they should be cut out, and the space furnished by training in young growth. The advantages of pruning at this time are that air and sunshine will afterwards reach all portions of the tree, thus assisting the young wood to ripen, and very little pruning will be necessary in winter. When the pruning has been done, wash the trees well by means of the garden engine.

GENERAL REMARKS.—Our soil is very dry, and it has been necessary to water fruit trees bearing heavy crops, and more especially those trained on high walls. If the fruit is required for exhibition purposes, the roots must be fed regularly with liquid manure. If the mulch needs to be renewed apply fresh material after the ground is well watered, but should the weather become cold or wet, such mulchings should be removed. Hoe the soil frequently, to keep the ground clear of weeds, and also to provide a fine tilth on the surface, so that the ground will not crack.

THE KITCHEN GARDEN.

By R. P. BROTHERSTON, Gardener to the Earl of HADDINGTON, Tyninghame, East Lothian.

CABBAGE.—The largest Cabbage plants raised from seed sown six weeks ago are ready for transplanting, and if a warm, sheltered situation is selected, the heads should be ready to cut very early next year. A distance of one foot apart is sufficient. The later plants may be planted in the same manner as they become ready in an open quarter of the garden. Ground that has been cropped with Onions is suitable, and the soil will only need forking lightly; when other work presses I plant these Cabbages without any preparation of the ground, cultivating the interspaces afterwards.

SPINACH. The final sowing of this crop may be made next week, and, in some localities the plants will be ready for picking in spring, if not before. Stir the ground thoroughly between the rows of the two previous sowings, and thin the plants to a few inches apart as soon as they are large enough for the work to be done. Later on additional space may be allowed them by pulling out every alternate plant, and using the thinnings for planting elsewhere. Spinach intended for cropping in winter and early spring should have no leaves removed until the plants are well established. If a supply of this vegetable is needed early it is preferable to pull up some of the plants, as this will afford more space for those that remain, but there is a limit to the number of plants that may be removed in this way.

LATE POTATOS.—These are growing vigorously, and there is promise of a good crop of abnormally large tubers. The haulm may be reduced very considerably, and if the top growth is partially ripened remove it altogether. Do not pull the haulm out of the ground but twist it off, otherwise there will be a danger of exposing some of the tubers, as well as disturbing the soil about them. When Potatos are stored in a clamp, in gardens where rats are numerous, inch-mesh wire-netting should be placed along the bottom of the clamp, and brought over the sides, when the soil is placed in position.

THE "FRENCH" GARDEN.

By PAUL AQUATIAS.

CROPS IN THE OPEN.—The main batch of Cauliflowers has been marketed, and a succession will be maintained by those planted from May onwards. As these later plants are strongly established very little watering will be needed as the dews will now provide sufficient moisture. Caterpillars are always numerous during September, and may attack the plants unless they are sought out and destroyed.

LETTUCES.—The varieties Little Gott and White Passion are ready for transplanting in nursery beds, in frames preferably, to afford protection during stormy or wet weather. Another sowing may be made under cloches as a succession; it will be necessary to shade the glasses with mats in the day time. The final quarters for this crop should be prepared at an early date by setting frames upon ground which has been previously well manured and dug, and by putting inside each frame 6 barrow loads of black soil, so as to have the plants very close to the roof-glass, one of the chief points in the successful growing of this crop during the winter.

LATE KIDNEY BEANS must be kept clean of weeds by hoeing the soil frequently until the leaves cover the whole of the ground. When Melon frames are available they may be placed in position over the Beans. In favourable seasons the plants require the depth of two frames to shelter them satisfactorily; the top frame is only placed previous to the fixing of the lights early in October. If the Beans have been sown very closely it may be advisable to thin them and prick out the surplus plants in frames at 6 inches apart. The transplanted plants should be watered and shaded until they are well established.

WHITE LISBON ONIONS sown a fortnight ago are well through the ground, and the beds should be kept very clean to minimise injury caused by damping off. It may be advisable to sow broadcast in sheltered and well-drained beds seeds of Onion Tripoli and Giant Zittau, the plants to be pricked out either early in October or next spring. There may be a dearth of imported Onions next year, and in that event home-grown bulbs will be specially valuable.

CELERY planted in the old manure beds is ready for blanching. The beds should be watered sufficiently to keep the plants moist over the blanching period. When the leaves are dry they should be covered with mats or canvas for 15 to 18 days, when they will be ready for marketing. Only cover what can be disposed of each week, as the Celery soon decays after it is blanched. After having first hoed the ground between the rows of Red Celery, dress the plants with superphosphate of lime and draw the soil to the rows, covering the stems one-third deep. The late crops of Carrots sown at the end of July having been thinned should receive ample and regular waterings

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS FOR SEPTEMBER.

TUESDAY, SEPTEMBER 1—
Scottish Hort. Assoc. meet.

FRIDAY, SEPTEMBER 4—
Dundee Hort. Assoc. meet.

TUESDAY, SEPTEMBER 8—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Lawns and Their Upkeep"). National Dahlia Show at R.H.S. Hall.

THURSDAY, SEPTEMBER 10—
Vegetable show at Manchester (Messrs. Dickson & Robinson) (2 days).

TUESDAY, SEPTEMBER 15—
Broughty Ferry Hort. Assoc. meet.

WEDNESDAY, SEPTEMBER 16—
Nat. Dahlia Soc. Sh. at Crystal Palace (2 days).

MONDAY, SEPTEMBER 21—
Nat. Chrys. Soc.'s Executive and Floral Coms. meet.

TUESDAY, SEPTEMBER 22—
Roy. Hort. Soc. Coms. meet. (Special Vegetable Show). (Lecture at 3 p.m. on "Trees of Cambridge Botanic Gardens.")

THURSDAY, SEPTEMBER 24—
Manchester and North of England Orchid Society.

TUESDAY, SEPTEMBER 29—
Roy. Hort. Soc. Exh. of British-grown Fruits (2 days).

WEDNESDAY, SEPTEMBER 30—
Conference of Affiliated Mut. Imp. Soc.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 59.7.

Actual Temperatures :—
London, *Wednesday*, August 26 : Max., 65°; Min. 59°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday, August* 27 (10 a.m.); Bar. 29.5; Temp. 66°. Weather—Fair.
Provinces, *Wednesday*, August 26 : Max., 68° Dover; Min., 52° Ramsgate.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Dutch Bulbs, by Protheroe and Morris, at 67 and 68, Cheapside, E.C., at 11 o'clock.

WEDNESDAY—
Palms, Plants and Bulbs, by Protheroe and Morris, at 4.
Dutch Bulbs, at Stevens' Rooms, 38, King Street, Covent Garden.

The Details of Patriotism.

No trait of the national character is more conspicuous at the present time than the equanimity with which the people as a whole regard the situation created by the war. The quickly imaginative and the foreboder chafe at the equanimous bearing of the people, and would fain lash them to sudden and diverse activities. Whilst admitting that something besides equanimity is necessary if all the risks of the present situation are to be forestalled and met, we, for our part, prefer the steady basis of a tranquil mind to the feverish activity of more nimble-witted folk. Nevertheless, it is becoming more generally apparent that we may have to win our way to ultimate success by means of a long and arduous campaign. Imbued with this conviction, the spirit of the people will rise, and from out of the present chaos of uncertainty each man's duty will emerge clearly.

Those whom the War Office will accept will take the same step as the gardeners of Welbeck and Knowsley and offer themselves for military service, and those who are denied this solution of the problem of "What am I to do?" will find plenty of work at hand to keep them busy. Assuming that those in positions of responsibility in rural districts have followed the instructions issued in this journal immediately after the outbreak of war, the gardens which they tend are now well stocked with food plants, and so also are the cottage gardens and allotments in their neighbourhood. If for one reason or another this is not the case, no day should be lost before the work of planting is undertaken. A communication to the "Care of Food Committee" of the R.H.S. will enable those who require plants to get in touch with market growers and others who have supplies of Cabbage, Savoy and similar seedlings.

These duties discharged, it behoves all who have charge of cultivated land, and means to expend upon it, to do all that lies in their power to enhance the fertility of that land, and to initiate general schemes of improvement. This applies to privately owned gardens, public gardens, parks, golf links, allotments, and the like. It is an undoubted fact in certain rural districts that there is considerable unemployment of men well capable of carrying out such operations as trenching, and it is to be hoped that the example set by the Royal Horticultural Society at Wisley—of not reducing but *increasing* the amount of employment—will be followed widely in private gardens and public parks. We commend this course strongly to the private owner and to municipalities. Next in order of importance is the duty of discovering and keeping record of cases of unemployment, and of bringing these cases without delay before the local committees which are being established for the purpose of dealing with such cases. It must not be forgotten that the distress of the war is likely to press with peculiar severity on the women workers. For them employment must be found. In seeking out and assisting local and detailed cases of distress and suffering, we may all in our several stations help the cause of our country, and we shall be stimulated in this work by the reflection that to carry the war to a successful issue the suffering and distress must be, so far as may be, distributed evenly on the shoulders of all. If there be those who have other and more selfish views, we pray them to dismiss them, for the present struggle is likely to prove heavier than any upon which the British Empire has been engaged.

Supplementary Illustration.—Ever since 1873, when Miltonia vexillaria first flowered with Messrs. Jas. Veitch and Sons, the importations of the Banner Orchid, from its wide habitat, extending along the Cordillera from Ecuador to Antioquia, in North Colombia, have proved the variability of the species. The extremes are found in such varieties as M. vexillaria Memoria G. D. Owen, which has a dark, ruby-red base to the lip; the various white forms, and the deep rose coloured variety Empress Augusta Victoria, with its counterpart in miniature, M. vexillaria rubella. Some forty varieties of Miltonia vexillaria have received either First-class Certificates or Awards of Merit from the Royal Horticultural Society, a fact which also points to extraordinary variation. Marked as the variation of home-raised seedlings has been, it does not approach that shown in imported plants, although in floral beauty the home-raised forms of Messrs. Charlesworth and Co., Messrs. Armstrong and Brown, Messrs. Sander and Sons, and others, are improvements on the natural types. Variation in the seedling forms is shown in the intensity of the colouring of the mask at the base of the lip, and its approach to M. Bleuana (vexillaria × Roezlii) in its ray-like expansion. In Miltonia vexillaria Laelia Sander, exhibited by Messrs. Sander and Sons, St. Albans, at the Chelsea Show on May 19 last, a new feature is shown in the primrose-yellow tint of the ground colour of the flowers during the greater part of their duration. It is not easy to trace how this yellow tint extends over the whole flower, seeing that normally in the species the crest and lines at the base of the lip only have yellow colour. The flowers of M. vexillaria Laelia Sander are cream-white to primrose-yellow, with a rose flush on the petals, the mask on the lip being violet-purple. A great point in favour of these seedling Miltonias is that they grow more vigorously in an ordinary intermediate house than the species, and for this reason many who do not grow the natural species satisfactorily find they can succeed with home-raised seedlings.

Gardeners Respond to the Call.—We have information to the effect that many young gardeners recently employed in private establishments are to be found in Lord Kitchener's new regiment enlisted in Liverpool. As many as eight young men from the fruit and plant departments of Knowsley Gardens, the seat of the Earl of Derby, have volunteered for active service, and are now undergoing training at the depot. Lord Derby will keep the places of these men open until the end of the war. Their fellow gardeners will wish them good fortune, knowing full well that every man will acquit himself nobly in the honourable work that he has voluntarily undertaken.

Dutch Bulbs.—We are informed by the Dutch growers that several regular steamship services from Holland to England are restored, and that consequently bulb orders can be executed and delivered promptly. The bulb crop in Holland is stated to be exceptionally good.

Help from a Nursery Firm.—Captain W. Harcourt Webb, managing director of Messrs. Webb and Sons, Ltd., who is with his regiment, the Staffordshire Yeomanry, has offered the Government some of the firm's large warehouses for purposes of stores or hospital work. The directors have also arranged to look after the families of all their employees who may proceed to the front.

National Dahlia Society.—The Secretary, Mr. J. B. Riding, informs us that the annual exhibition will take place as arranged at the Crystal Palace, September 16 and 17. A Conference will be held in connection with the show, but the details for this have not yet been issued.

Flower Shows Abandoned.—In addition to those already published, the following flower shows have been abandoned for this season:—The National Rose Society's autumn exhibition fixed for September 24; Bradford Chrysanthemum Society's 28th Annual Exhibition, fixed for November 13-14; Dumfries and District Horticultural Society's Show, fixed for August 29-30;

Newtownards Horticultural Society's Exhibition, fixed for September 3.

The Food Supplies.—Messrs. Kelway and Son have offered gratis to the inhabitants of Huish Episcopi and Langport small parcels of vegetable seeds suitable for immediate planting.

—— The Board of Agriculture and Fisheries appeals to horticulturists, both owners of private gardens and market growers, to preserve for distribution to allotment holders and cottagers their surplus stocks of seedling vegetables suitable for autumn planting in the district. These seedling plants, usually destroyed after the growers' own requirements have been satisfied, might under present conditions prove most useful. It is suggested that the owners of private gardens should distribute their surplus plants locally either direct or through relief committees. In districts in which allotments are numerous, the owners of large gardens might be able, at little inconvenience or expense, to sow—during this month—cabbages suitable for planting out in October, and so provide plants for those who themselves have no facilities for raising seedlings. Timely assistance in supplying plants would largely increase the comfort of cottagers in the coming year. Market growers who may have larger stocks of surplus seedlings than could be utilised locally are invited to communicate with the Secretary of the Royal Horticultural Society ("Care of Food" Committee), Vincent Square, Westminster, S.W., who have generously placed their services at the State's disposal for this work. There is a second direction in which horticulturists, both professional and amateur, might give timely assistance. The Board themselves and the horticultural Press will publish hints on the selection and cultivation of vegetable crops, and instruction will be provided by the teaching staffs of colleges and county councils, but it will be recognised that printed instructions have very limited uses in the circumstances under consideration, and that it is impossible to convey adequate practical instruction to all who are likely to need help through the comparatively small number of horticulturists engaged as instructors by education authorities. Much might be accomplished, however, if the gardeners employed in private establishments and skilled amateur horticulturists would volunteer to give practical hints on the cultivation of vegetables to the relatively inexperienced people who will endeavour to eke out their resources in the coming year by resorting to the cultivation of the allotments provided for them by agencies formed to combat the hardships caused by unemployment. Although there are large stocks of food in the country it is the duty of every occupier of land to avoid waste, and by forethought and consideration of the needs of others to alleviate the hardships that a rise in the price of foodstuffs will entail. The Board has organised a Special Enquiries Branch for the purpose of dealing with all matters affecting supplies of home produce and of collecting and compiling information from farmers and others on questions affecting agricultural interests at the present time. Officers of the Board have been stationed in different districts to keep in close touch with the Board's staff of crop reporters, market reporters, small holdings commissioners and agricultural correspondents, and also with the agricultural colleges and provincial councils. They will also supplement the information as to prices of live stock and agricultural produce which is regularly received from the Board's market reporters by reporting any instances of local or exceptional disturbance of prices or supplies, whether of commodities sold by farmers or of feeding stuffs, etc., bought by them. All communications on such matters should be addressed to the Board of Agriculture and Fisheries, 3, St. James's Square, marked "Special Enquiries Branch."

—— The movement by which workers in Cumberland and Westmoreland are trying to add to their food supplies by cultivating allotments provided for them by local authorities, landowners, manufacturers, agriculturists, and horticulturists, is progressing satisfactorily. A strong county committee has been formed with "The Home Food Culture Office," in Victoria Viaduct, Carlisle; teachers of agriculture and horticulture living in the two counties, and a county land agent, have been appointed technical advisers, and Mr. W. B. Little, the County Instructor in Horticulture, is secretary. Landowners are placing land at the disposal of the committee free of rent, rates and taxes for a year, and the ground will be broken up by men out of work, and parcelled into allotments. Experts in both counties give private advice, supply seedlings, and show willing and able workers how to prepare and crop small allotments to produce food for home use. Existing allotment holders about Carlisle and all over the two counties lend a most willing hand to their new neighbours, and the local gentry readily allow their gardeners to help in preparing seedlings and the soil for their reception. So far, the Home Food Culture Committee has only utilised land voluntarily placed at its disposal; but it would be more satisfactory if parish councils put into operation their powers to create allotments which, it is said, they have not hitherto exercised so largely as they might. The advice of the Board to increase the Wheat area is being seriously considered throughout the North of England, especially in the corn-growing districts of the East Riding of Yorkshire, Lincolnshire, and Nottinghamshire.

Farmers' Horses.—The Board of Agriculture and Fisheries is in receipt of frequent communications respecting the effect of the mobilisation of the Army on the number of horses available for carrying on the farming operations of the country, and as a great deal of misconception appears to exist in respect of the number of heavy draught horses actually required by the military authorities, the Board thinks it desirable to publish the approximate position so far as heavy horses are concerned. The Returns obtained by the Board in June last show that the estimated number of horses used for agriculture, including mares kept for breeding, but excluding saddle horses, carriage or trap horses and vanners, is 793,436. The number of heavy draught horses that have been obtained recently by the military authorities from agricultural holdings is estimated at 9,000, or only slightly over 1 per cent. of the whole. It is clear, therefore, that the number of heavy draught horses on agricultural holdings is amply sufficient to meet the requirements of the Army without interfering seriously with the cultivation of the land.

Home-grown Foodstuffs. — As some misapprehension appears to exist among farmers and others concerned in questions relating to supplies of home-grown foodstuffs, the President of the Board of Agriculture and Fisheries desires to make it known that all communications on such matters should be sent direct to the Board of Agriculture and Fisheries. The Agricultural Consultative Committee, under the chairmanship of Sir Ailwyn Fellowes, has been closely engaged in considering the subjects referred to it by the Board, and is rendering valuable assistance in an advisory capacity, but the Committee has no executive functions.

Fasciated Lily.—A remarkable example of fasciation in Lilium candidum has been forwarded by Messrs. Sander and Sons, St. Albans, who inform us that the plant was grown by Mr. J. Ellingham, stationmaster at the Great Northern Railway, St. Albans. The stem was several inches wide, and there were no fewer than 97 flowers, all, of course, much undersized. Fasciation is very common in the members of Liliaceae, and in Asparagus especially. A fasciated inflorescence of Lilium dalmaticum, which bore as many as 366 flowers and buds, was figured in the *Gardeners' Chronicle* for October 16, 1909, p. 259.

Appointments.—The following appointments have been made on the recommendation of the Director of the Royal Gardens, Kew: Mr. G. G. Auchinleck, B.Sc., Agricultural Superintendent, Grenada, has been appointed by the Secretary of State for the Colonies Assistant Director and Chemist in the Department of Agriculture, Mauritius. Mr. F. Birkinshaw, Assistant Agricultural Superintendent, St. Vincent, has been appointed by the Secretary of State for the Colonies Instructor of Agriculture in the Department of Agriculture, Mauritius. Mr. George Farmer has been appointed by the Secretary of State for the Colonies Agricultural Instructor for the Coast Region of the East Africa Protectorate. Mr. J. Jarrett, lately a member of the gardening staff of the Royal Botanic Gardens, has been appointed a Sub-Inspector for the purposes of the Destructive Insects and Pests Acts under the Board of Agriculture and Fisheries. Mr. T. F. Chipp, B.Sc., Assistant Conservator of Forests, Gold Coast, has been appointed by the Secretary of State for the Colonies Assistant-Director of Gardens in the Straits Settlements. Mr. Alfred Redmayne Bell, a member of the gardening staff of the Royal Botanic Gardens, has been appointed by the Secretary of State for the Colonies a Curator in the Agricultural Department of Nigeria. Mr. M. B. Scott, M.A., and Mr. W. B. Turrill have been appointed by the President of the Board of Agriculture and Fisheries, on the results of a competitive examination, Assistants in the Royal Botanic Gardens, Kew.

Retirement of Mr. N. E. Brown.—The *Kew Bulletin* states that after thirty years' continuous service Mr. Brown retired from the post of first-class assistant in the Herbarium on July 10, having reached the age limit. Mr. Brown studied general natural history in his school days, but entomology was perhaps his favourite pursuit. On leaving school he was appointed Curator of Mr. W. W. Saunders's then well-known museum of natural history at Reigate. In February, 1873, he entered the Kew Herbarium, and thereafter devoted practically the whole of his time to botany, and especially to the study of the rich flora of South Africa. His activity has not been limited to taxonomy and descriptive work, for though he published little in other branches, his microscope has always been a source of great enjoyment to him. His knowledge of the distribution of plants has been of great service to the institution and has also been employed in the instruction of many generations of gardeners, who as young men have attended his Kew lectures on geographical botany. In 1879 he received the honour of being elected an Associate of the Linnean Society. The *Journal* of the Kew Guild for 1904 contains a portrait of Mr. Brown, and an appreciation of his work, more especially in its relation to horticulture; and the *Kew Bulletin* for 1897 and 1907 contains almost complete lists of his very numerous publications. Mr. Brown will be known to our readers as a frequent and valued contributor to these pages, in which he has published the original descriptions of many new species of plants.

The Cultivation of Cauliflowers in Normandy.—Recent years have seen a large increase in the cultivation of primeurs (for early market) in Normandy, and an article by M. P. Labonnoux in *La Vie Agricole* (June 20, 1914) describes the cultivation of Cauliflowers in the north-west of the Department of La Manche. The region in which these primeurs are grown is a massive strip on the seacoast not more than a mile wide, and extending from Cherbourg to Saint Vaast-La Honque. Cauliflowers follow early Potatos, the latter being lifted in June, when the ground is prepared for this crop, which is harvested from February till the end of April. The variety grown is Broccoli, a Cauliflower with upright leaves. The ground is heavily dressed with a complete artificial manure composed of nitrate of soda, 100 parts by cwt.; sulphate of ammonia, 60 parts by cwt.; superphosphate, 160 parts by cwt.; sulphate of potash, 40 parts by cwt.; plaster, 40 parts by cwt. This is added at the rate of 12½ cwt. to the acre. In spite of the high cost of the manure and the rent of the ground (£6 10s. to £8 per acre) the crop is remunerative. The plants are put in about 2 feet apart in the row, and an acre carries about 7,200 plants, of which 95 per cent. give good heads. Much of the produce from the neighbourhood of Tourlaville goes to supply the transatlantic boats which touch at Cherbourg, and that from the region of Barfleur is sent either to Paris or the large French towns such as Le Mans, Tours, Limoges and Poitiers.

R.H.S. Bulb Show, 1915.—Subject to the general rules of the Society the Council of the Royal Horticultural Society offers prizes presented to them by Messrs. Robert Sydenham, Ltd., for competition at the Bulb Show on March 9 and 10, 1915. Classes 9-11.—Bulbs grown in moss fibre or similar material (not earth) and without drainage. Amateurs.—Class 9: Six single Hyacinths, in separate vases, not exceeding 6 inches in diameter, to be selected from any one of the following varieties: Balfour, Boerhave, City of Haarlem, Enchantress, General Vetter, Innocence, Ivanhoe, Jacques, King of the Blues, Koh-i-Noor, La Victoire, Lady Derby, La Grandesse, Queen Mary, Schotel, Totula. Class 10: Six cases of Tulips (vases not exceeding 7 inches in diameter), no restriction as to the number of bulbs in a vase, to be selected from the following: Couleur Cardinal, Fabiola, Golden Queen, Joost van Vondel, Keizerskroon, Le Rêve, Pink Beauty, Prince of Austria, Red Admiral, Rose Luisante, Van der Neer, Vermilion Brilliant and White Joost van Vondel. Class 11: Six vases of Narcissi (vases not exceeding 7 inches in diameter), no restriction as to the number of bulbs in a vase, to be selected from the following: Albatross, Argent, Artemis, Bianca, Cardinal, Dairymaid, Diadem, Duchess of Westminster, Firebrand, Glitter, Gloria Mundi, Golden Bell, Horace, Lilian, Lucifer, Madame de Graaff, Oriflamme, Scarlet Runner, Seagull, Siddington, Stonechat, Valeria, Victoria and White Lady. The exhibits in these classes must have been grown entirely in the receptacles in which they are shown.

Horticultural Directory for 1915.—We are desired by the editor of this work to ask head gardeners if they will kindly inform him at 10, Essex Street, Strand, of any change of proprietorship or address that may have occurred since October last.

R.H.S. Awards to Melons.—At a meeting held on the 25th inst. the President and Council approved the following Awards to Melons under trial at the Society's gardens at Wisley:—Hero of Lockinge (F.C.C.), James Carter and Co.; Longford Castle (Highly Commended), Tucker; Invicta (Commended) and King George (Commended), both from Sutton and Sons.

The Best French Varieties of Apple and Plum.—A list of the Apples which sell easily in the French market—drawn by Mr. H. Bliss (*Rev. Hortic.*, 1914, p. 246)—includes the following:—Rambour d'été, Sans Pareil de Peasgood (Peasgood's Nonesuch), Grand Alexandre, Jeanne Hardy, Belle de Pontoise, Belle fleur jaune, Reinette de Canade Grise, Reinette de Caux, Calville blanche, and Châtaignier. Of autumn varieties the following are mentioned:—Grand Alexandre, Reinette d'Angleterre, Jeanne Hardy, Reine des Reinettes and Châtaignier; and of winter fruit Reinette dorée, Reinette blanche, and Reinette de Canade Grise, Ribston Pippin, Doux d'argent, Belle fleur jaune, Reinette franche, Calville rouge d'hiver, Calville blanche, Api, Reinette de Caux, and Reinette Grise. Among Plums which sell well are Favorite Lâtive de Rivers, Monsieur Lâtive, Reine Claude Verte, Reine Claude Dorée, Prune de Montfort, Mirabelle petite, Grosse Mirabelle, Reine Claude Diaphane, Reine Claude Violette, Reine Claude de Braby, Bleu de Belgique, Prune des Béjonnières, Monsieur à Fruits Jaune, Reine de Mirabelles, Abricotée, Reine Victoria, Mirabelle tardive, Tardive musquée. The chief varieties supplied to the Paris market are Reine Claude and Petite Mirabelle.

Prices of Vegetable Foodstuffs.—An interesting and well reasoned article in the *Lincoln and Stamford Mercury* on vegetable foodstuffs and their probable price deserves to be widely read. The writer maintains that the far-sighted speculator—relying on the rise of prices—has already secured big bargains from the producers by buying up at low prices large breadths of Potatos. He advises producers, fruit and Potato growers in particular, not to part with their crops with undue haste.

Drying Fruit.—Those who possess brick ovens may preserve considerable quantities of Apples, Pears, and Plums by drying. Though the process is tedious, it should be practised by those who have the facilities. The simplest method is to place Apples or Pears (quartered) or whole Plums on wicker trays in the oven just before bedtime. Leave the oven door ajar. Take out the fruit in the morning, and keep it till evening in a dry place. Repeat each evening for two or three weeks, and preserve the dried fruit in stoppered jars or bottles.

SUGGESTIONS TO ALLOTMENT HOLDERS FOR AUTUMN TREATMENT OF LAND.*

The following suggestions and recommendations have been prepared for the benefit of those who occupy small areas of land, such as allotments and gardens, or who wish to bring fresh land under spade cultivation with the view of increasing their supplies of vegetables during the coming autumn and winter and thereafter. It should, of course, be borne in mind that the suggestions made are dependent upon local conditions.

Land which is available for spade cultivation in small areas may be divided into three classes, viz.:—

(*A*) Land at present under spade or arable cultivation.

(*B*) Good land which has been under permanent grass.

(*C*) Derelict or waste land.

Class A.—Cultivated Land.

Assuming that land of this character has been well dug over and is in good heart, very little additional cultivation will be required in the autumn. The ground should, however, be dug one spit deep, and a dressing of stable manure should be incorporated if the ground was not manured in spring.

For Sowing in August.—On such land the following crops might be sown immediately:—

1. Early Turnips	White and Purple Milan
2. Carrots	Early Horn.
3. Onions	White Lisbon.
4. Lettuce	Winter varieties.
5. Radish	French breakfast.
6. Spinach	Winter or Prickly.

Seed should be sown at the following rates:—

1. Turnips.—Sow one ounce to 200 feet of drill half an inch deep. The drills should be 12 inches apart. Thin out to 5 to 9 inches apart, according to variety.

2. Carrots.—Sow one ounce to 300 feet of drill three-quarters of an inch to 1 inch in depth. The drills should be 12 inches apart. Thin out gradually to 5, 6, or 8 inches apart, according to season and variety.

3. Onions.—Sow one ounce to 200 feet of drill (10 lb. per acre) 1 inch deep. There should be 9 to 12 inches between the drills. Autumn-sown varieties need not be thinned.

4. Lettuce.—Sow half an ounce to 160 feet of drill one-quarter of an inch deep, in rows 9 to 12 inches apart. Thin out or plant out, leaving 6 to 8 inches between the plants, according to variety.

5. Radish.—Sow one ounce of seed to 75 feet of drill 1 inch in depth, in rows 6 to 9 inches apart.

6. Spinach.—Sow one ounce of seed to 65 feet of drill, about 1 inch deep, in rows 12 to 15 inches apart.

For Planting Before Mid-September.—The following vegetables might be planted in August or early September:—

1. Early Cabbage .	Any early variety.
2. Broccoli	Winter and spring varieties.
3. Borecole or Kale	Winter and spring varieties.
4. Leeks	Musselburgh.

They should be planted in the following way, viz.:—

1. Early Cabbage.—Plant in rows, leaving 15 inches between the plants and 18 inches between the rows. Very dwarf varieties, however, succeed if only 12 inches are left between the plants and 15 inches between the rows. Strong-growing late varieties require 18 inches between the plants and 27 inches between the rows. The plants must be earthed up with a plough or hoe as the crop grows.

2. Broccoli.—Plant in rows, leaving 18 inches between the plants and 27 inches between the rows. The crop should be earthed up, as in the case of Cabbage.

3. Borecole or Kale.—Plant in rows the same as Broccoli.

4. Leeks.—Plant in rows, leaving 4 to 6 inches between the plants and a foot to 15 inches between the rows.

For Sowing or Planting in October and Early November.—The following vegetables might be sown or planted in October or the beginning of November:—

1. Broad Beans.
2. Early Peas.
3. All varieties of Cabbage and Kale raised from seed sown in July or August.†

These plants will yield crops in the following spring and early summer, but too late to allow of Potatos being successfully planted after them. They could, however, be succeeded by Onions, Broccoli, Brussels Sprouts, Kale or Carrots. Growers should remember that it is inadvisable that one crop of the Cabbage family should be succeeded by another of the same kind. Beans and Peas should be followed by Cabbage, and Cabbage by Onions, Carrots, or some kind of crop other than the Cabbage tribe.

For Sowing or Planting in February and March.—Much land may not be ready for cultivation till the spring; the following crops are suitable for land that has been lying vacant during the winter. Work may begin in February or as soon as genial weather sets in:—

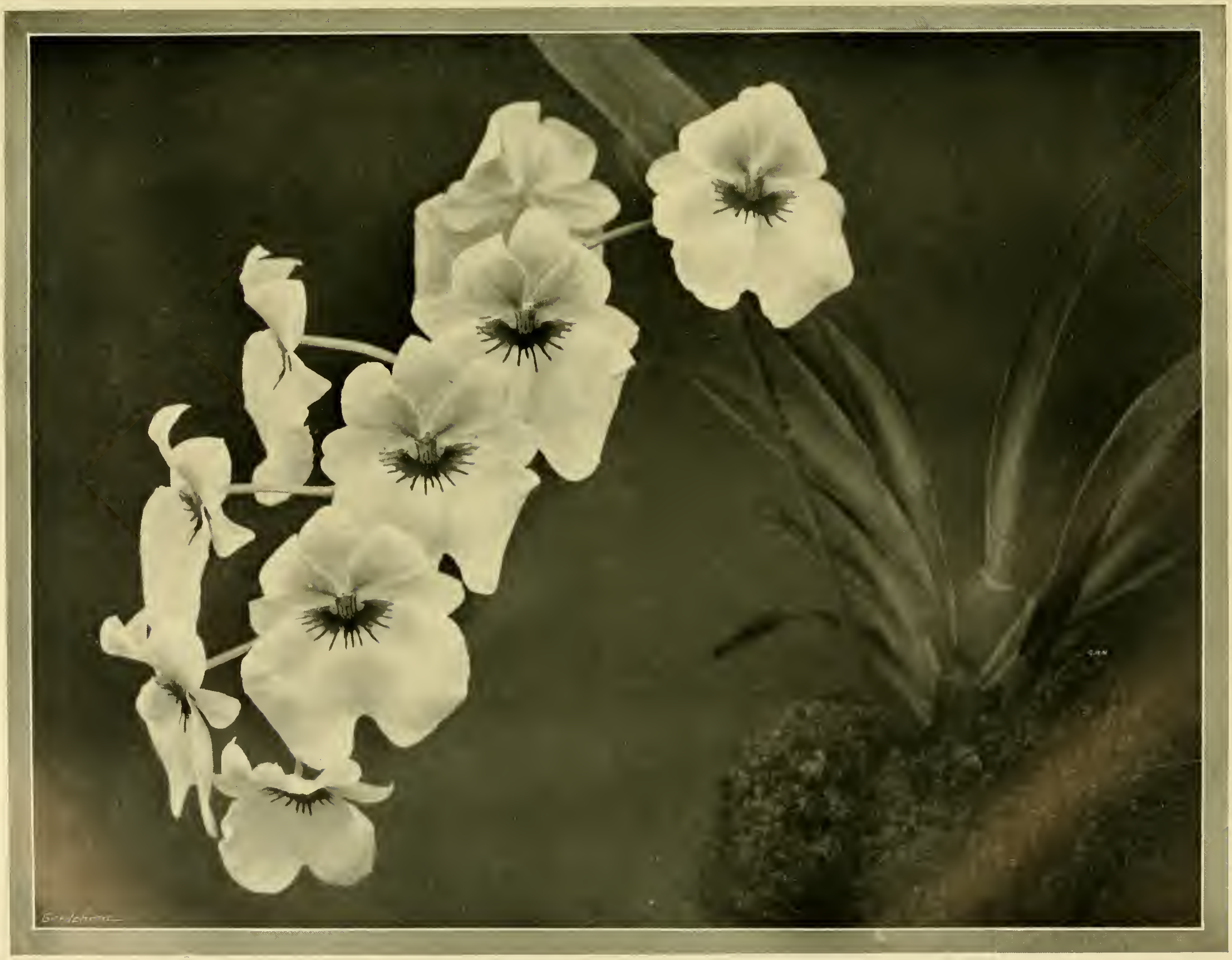
1. Potatos	Early varieties.
2. Beans	Broad and Kidney.
3. Peas	Early and mid-eeason.
4. Cauliflowers	Early.
5. Round Spinach.	
6. Spinach Beet.	

1. Potatos.—The land should be thoroughly dug and forked during the winter and worked into a friable condition. The common distance to plant for first-early varieties is 4 inches in depth, 12 inches between the sets, and about 20 inches between the rows. For mid-season and late

---

* Board of Agriculture and Fisheries. Special Leaflet No. 1.

† If Cabbage and Kale plants are required for distribution on a large scale in October, seed should be sown in August at the rate of about 25 lb. per acre. Seed beds of one acre should furnish about 500,000 plants.



MILTONIA VEXILLARIA "LAELIA SANDER." FLOWERS, PRIMROSE-YELLOW MARKED WITH PURPLE.

Printed by Love & Malcomson, Ltd., London, W.C.

varieties the sets may be 15 inches apart and 24 to 30 inches between the rows. For further information see Leaflet 173 on Potato Growing.

2. Broad Beans.—Plant 3½ to 4 inches deep, with 18 to 24 inches between the drills and 4 inches between the seeds.

Kidney Beans.—Plant 2 inches deep, 2 to 4 inches apart in the drill, and 18 to 27 inches apart in the rows. One pound will plant 150 to 200 feet of drill.

3. Peas.—Sow in a flat drill from 2 to 3 inches in depth, according to soil—in stiff soil shallow, and in light soil deep. Dwarf varieties should be sown in rows 18 inches to 2 feet apart. Tall varieties further apart, according to height.

Early Peas require one pound to 70 feet of drill. Late varieties one pound to 85 feet of drill.

4. Cauliflowers.—The distances are the same as in the case of Cabbage.

5. Round Spinach.—Sow one ounce of seed to 65 feet of drill, about 1 inch deep, in rows 12 to 15 inches apart.

6. Spinach Beet.—Sow as for round Spinach, but thin out to 8 or 10 inches apart in the rows.

Information as to the application of fertilisers to these crops will be found in Leaflet 106.

Class B.—Good Grass Land Broken up for Spade Cultivation.

A great extension of allotments and other holdings under spade cultivation may also take place. Many acres of grass land might be utilised in this manner, especially in the neighbourhood of large towns. Such land must be treated in a different way to the cultivated land described under the previous heading.

In the first place, the land should be bastard trenched. To begin with, the turf should be skimmed off in a thin layer 2 to 3 inches in depth from a trench which should be 18 inches to 2 feet broad. The first spit of soil immediately below the turf should be removed. The bottom soil should then be stirred to a depth of 6 inches with a pick, digging fork or spade, according to the nature of the subsoil. The turf layer from the next trench should then be laid upside down on the stirred bottom of the first trench, and the first spit of soil placed above it. This process should be continued till all the land has been dug over, the turf and first spit of soil from the first trench being used to level up the last.

Land of this character is often very fertile, and should give a good yield of Potatos or other planted crop the following summer. It can, however, seldom be used for crops raised from small seeds in the same year as it is broken up, for two reasons—(1) unless the turf is very good and free from weeds the result of the cultivation may bring up and favour the growth of a number of weeds which have hitherto been kept under. A good deal of hoeing may be necessary to keep these down, and this may interfere with the seedlings. (2) Old grass land is often infested with wireworms (the young of the click beetle) and leather jackets (the young of the daddy long legs). These insects may completely destroy the crop as soon as it begins to grow.

Treatment for these pests is given in Leaflets 10 and 11, but as the methods advised may not be available at the present time the land should be frequently hoed and the weeds kept down so as to deprive the insects of their food for some months. Lime may also be worked into the land.

Class C.—Derelict Land.

In many districts fertile grass land will not be available for cultivation by spade labour, and if additional land is to be brought under tillage poor soil or waste land must be broken up. There are many acres of land of this class available, especially in the neighbourhood of large towns, but care is needed in treating it if it is ever to bear a satisfactory crop. The following treatment is recommended:—

In the first place, all rank growth of weeds should be cut down with a scythe. If the weeds are of a soft nature, they might be put in heaps with any available grass for making into a compost, or if annuals and free from ripe seeds, they may be dug in at once. If of a fibrous or woody nature, they should be burnt. The land might then be skimmed and bastard trenched as advised above, but the greatest care must be taken (1) not to bring the subsoil to the top, and (2) to clear out the roots of such weeds as Docks, Couch Grass, Creeping Buttercup, Convolvulus, Nettles, etc. Time spent in the careful eradication of such weeds will be well repaid.

Land of this character, when freed from weeds and properly trenched, will bear a useful crop the following year if properly manured. As stable or farmyard manure will probably not be available in such places, it will be necessary to supply the plant food from other sources. The chief ingredients required to secure satisfactory growth are (1) nitrogen, (2) potash, (3) phosphates.

Nitrogen can be supplied by digging in all soft vegetable matter, such as grass, leaves of trees, and decaying vegetable matter of any sort. The droppings of any kind of animal may be used. Poultry and pig manure should be well mixed with earth on removal from the pens or sties before applying it to the land.

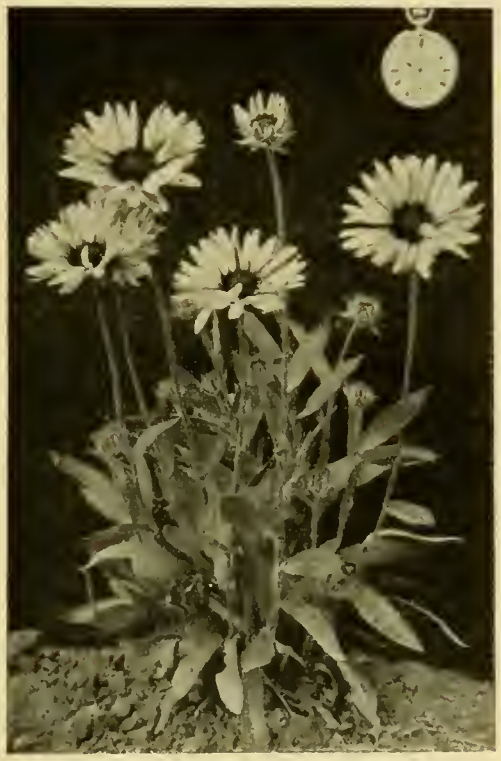


Fig. 66.—Gaillardia. Showing the position of the flowers at 10 a.m.

Potash may be supplied by collecting and burning all kinds of woody material, such as hedge clippings, prunings from trees, etc. The ash should be carefully saved in bags and kept dry. It is especially useful on land that is to be cropped with Potatos. Seaweed is a valuable potash manure, and should be collected at all rocky sea coasts (see Leaflet No. 254).

Phosphates will not be easy to supply from natural sources, unless large quantities of fish waste are available, but phosphatic fertilisers, such as basic slag, superphosphate and bone meal, should be easily procurable through the usual trade sources.

Lime will be required in many cases, and should always be applied to rich pastures after breaking up. It should be worked into the surface layer when the land is dug.

The advice as to insect pests and weeds under Class B applies with even greater force to this class of land, and great care should be taken to get rid of both before the land is sown or planted with any crop. It would be better to keep such land vacant till the spring, when Potatos might be planted.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Flowers that Follow the Sun (see figs. 66 and 67).—It is remarkable how many comparatively simple problems remain unsolved. Not a few of these could be settled by a very small amount of observation. As an instance, it may be mentioned that the point as to whether the Sunflower always turns its face to the sun is a matter which few could answer with certainty. So far as the observations of the writer have gone it does not seem that the true Sunflowers (Helianthus) are very responsive to the warm rays, but it is true that the flower-heads twist a little, as is very evident when the stalk at the back of the blossoms is examined. Practically all the flowers of Compositae are more or less sensitive to the action of the sun, however, and one case which I had under close observation proved to be remarkable. In a clump of Gaillardias, in a fully exposed situation, the flowers altered their position radically between the morning and the afternoon, as is well shown in figs. 66 and 67. At ten o'clock in the morning the flowers were facing towards the south-east; by four their position was almost completely reversed and the blooms looked to the west where the sun was setting. *Leonard Bastin.*

Simple Methods of Preserving Fruit.—Place any kind of sound, ripe fruit into glass jars, being careful not to bruise or break any. When the jars are full just cover the fruit with clear cold water and tie down with bladders. Stand as many of the jars of fruit as will go into a large saucepan of water, keeping the tops of the jars above the water. Pack a little hay between the jars to keep them steady, stand over a steady fire, and make the water very hot for three-quarters of an hour, but do not on any account let it boil. Afterwards remove the saucepan and leave the jars in the pan till all is cold. Fruit preserved in this manner will keep good for a long time, and jam can be made of it afterwards. I saw some Cherries last week that were preserved in this way last year, and they looked like this year's fruit. *H. Brown, Welford House Gardens, Welford, Rugby.*

—— An American lady of my acquaintance has always bottled her fruit by simply putting it into the usual bottles sold for that purpose with no water or sugar. The fruit should be quite clean and flawless and packed as closely in the bottles as possible without breaking them. The bottles are screwed down, placed in a cool oven at night, and removed the following morning. The tops are then given an extra screw round by the hand to make sure they are quite tight. The bottles are not full, as the fruit sinks with the heat of the oven. That is the only fault or difference from other methods. Sugar is only added when the fruit is used. I have bottled Gooseberries, Plums and Loganberries in this manner with perfect success. *Francis A. Geoghegan, Eversham, Stillorgan, Co. Dublin.*

Pancratium illyricum (see p. 140).—This plant is hardier than is generally believed, and is the hardiest of all the Pancratiums. It grows well in an ordinary border in Sir Herbert Maxwell's gardens at Monreith, flowering and increasing in size annually. The beautiful, white trumpet-shaped flowers are highly pleasing. Pancratium illyricum requires a well-drained soil, and should be planted deeply—9 inches to a foot—in most places. *S. Arnott.*

Spinach Substitutes (see pp. 117 and 151).—Probably the best substitute for Spinach in a small garden is Chenopodium Bonus Henricus, known in different localities under various names, such as Mercury, Lincolnshire Spinach, and Good King Henry. The plant is a hardy native perennial, and may be planted now. It may be propagated by division of the roots and from seed, which should be sown as soon as it is ripe. This Chenopodium produces good leaves and shoots in town gardens. To obtain the best results the roots must receive plenty of moisture and nourishment. The young shoots and leaves are generally ready for use from the end of March to the end of September. In making new plantings, plant at one foot apart each way, the alternate plants to be taken out later. All Spinach and its substitutes are liable to be attacked by disease, but this may be prevented by dressing the crop liberally with soot. *J. E.*

An Appeal to Horticultural Societies.—As exhibitors at horticultural shows who are making an effort to keep our works running, we would appeal to horticultural societies who have not yet decided to abandon their shows to continue them. We are certain every Englishman at the present time wishes to do everything he can for his country, and the chief thing for those of us who are not at the front to consider is, how we can minimise the distress which must inevitably accompany a great war. Horticultural shows employ a large number of men; thousands of employees in nurseries are more or less dependent upon them, and still again there are large numbers of agricultural labourers and others who have been working in their gardens preparing produce for exhibiting, and such persons will suffer a serious loss if shows are abandoned. Nothing causes so much misery as closing down works, including nurseries, and we think it is unpatriotic for horticultural societies to abandon their shows in times of national stress, such as the present, just because a few exhibits will be unavailable. One pound spent in wages or in buying goods or plants and flowers produced by British labour is better than subscribing five pounds to relief funds. *The Four Oaks Spraying Machine Co.*

Horticulture and the War.—The Council of the Horticultural Trades' Association has lately received letters from nurserymen and seedsmen in all parts of the country asking for advice as to the right course to pursue in the present crisis. In reply it has issued a recommendation to its members to avoid a too pessimistic view of the situation and so far as possible to continue their business on normal lines. The Council feels that anything in the way of panic, resulting in the dismissal of employees, would throw out of employment many thousands of one of the most deserving classes of workmen in the country, and so add largely to the misery and destitution to be dealt with by public and private charity. It is much better that men should be employed in productive work for the general good than that they should be supported by charity and exposed to the risks inseparable from unemployment. It is, however, necessary for the public to do its fair share in assisting the nursery, seed, and bulb trade of this country to follow up the line of action we have recommended, as, unless some measure of support is given by those able to purchase bulbs, seeds, trees, etc., for their gardens it will be impossible for nurserymen and seedsmen to pay wages. It should be remembered that gardens are not altogether a luxury, but minister largely to the food supply and health of our population, and garden owners will be doing public service by maintaining them in good condition and thereby providing employment for many thousands of workmen. This will also prevent a large area of land from going out of cultivation, to the ruin of many and the reduction of the food supply of the country. *W. Cuthbertson, President, Chas. E. Pearson, Secretary, Horticultural Trades' Association of Great Britain and Ireland.*

Publications Received.—***Report on Crops, Live Stock, etc.*** Bulletin 89. Winnipeg. 1914. (The Department of Agriculture and Immigration, Winnipeg.)—***Directory for Higher Education with Regulations of the Committee.*** Issued by the Staffordshire County Council Education Committee.—***Annual Administration Report of the Forest Department of the Madras Presidency*** for 1912-13. (The Superintendent, Government Press, Madras.) 2s. 9d.—***Notes on Poultry Feeding***, special leaflet No. 2, and ***Poultry on Allotments and Garden Plots***, special leaflet No. 3. Gratis. (Board of Agriculture and Fisheries, 4, Whitehall Place, London.)

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 87-93.)

(*Continued from p.* 153.)

Berkshire.—The fruit crops generally are clean and healthy. There would have been an enormous crop of Strawberries but for frosts in May, and later they suffered from drought, which prevented a large number from swelling. Fillbasket was remarkably prolific, and we have had some splendid fruits; but quite half the crop never came to maturity. *L. T. Petty, Arlington Manor Gardens, Newbury.*

Dorsetshire.—Apples are yielding the best crop for many years, and thinning has been necessary in the orchard as well as on bush trees in more sheltered positions. Cox's Orange Pippin and Blenheim Pippin in particular are well cropped on all trees. Pears have also required much thinning, especially on wall trees. Plums are yielding an average crop, and the trees are freer from aphis than usual, while the branches of Damsons require props to support the heavy crop. Of Sweet Cherries, Bigarreau Napoleon is the only variety with a heavy crop, but the crop of Morellos is over the average. Peaches and Nectarines are good, but Apricots are few. Of bush fruits, Red and Black Currants are abundant, and of superb quality, whilst the crop of Gooseberries is extraordinary. The Strawberry crop was satisfactory, and Nuts of all kinds are abundant. *T. Turton, Castle Gardens, Sherborne.*

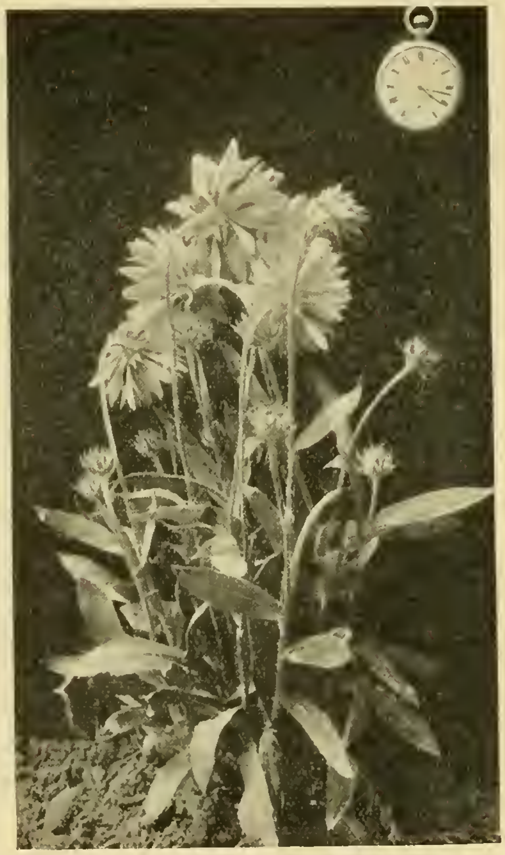


Fig. 67.—Gaillardia. The same flowers at 4.15 p.m. as depicted in fig. 66.

—— Nearly all sorts of Apples are cropping very heavily here. Pears, such as Beurré Diel, Beurré Alex. Lucas, Knight's Monarch, Fondante de Thirriott, Marie Louise, Williams' Bon Chrêtien, Seckle and Beurré Bosc have full crops. Doyenné du Comice is fair. Damsons are bearing large crops on orchard trees; several of the best Plums on walls are also good Cherries, both Sweet and Morello, are excellent. Currants and Gooseberries are bearing very heavy crops. Black Currants are the best I have ever had, especially Boskoop Giant and Coronation. Strawberries were good, Royal Sovereign and Laxton's Latest bearing well. Walnuts and Filberts have given heavy crops. *Thos. Denny, Down House Gardens, Blandford.*

—— There was a fine show of blossom on hardy fruits which set fairly well, and a heavy crop was anticipated; but many Apples and Pears have dropped, owing to a dry May and June. There are, however, still good average crops left. Strawberries were abundant, but small. Raspberries are only medium; ours got rather badly hit by the frosts of May 25, 26, and 27. Figs promise a good crop of good quality. The garden here is on a slope facing S.S.E. The soil is fairly stiff and shallow, with chalk and flint subsoil. *J. Jaques, Bryanston Gardens, Blandford.*

—— Fruit crops in this district are mostly plentiful and good. The only crop that was damaged by frost in these gardens was the Strawberry. Nearly all the Potatos for miles around suffered more or less. Apricots are yielding a light crop; the weather was cold when they were in bloom, and few insects were about, and notwithstanding protection and artificial pollination the crop is below the average. Gooseberries are bearing a very heavy crop. Black Currants have suffered somewhat from "big bud." The soil is light and friable, on a clay subsoil. *A. Shakelton, Forde Abbey Gardens, Chard.*

—— The fruit crop is a very satisfactory one on the whole, bush fruits being particularly good. Strawberries flowered well and set an abundant crop, but the prolonged drought seriously affected them at a critical time. Plums are cropping heavily and need severe thinning. Apples, in some districts, did not set very well, and on some soils large quantities dropped after setting, due probably to partial exhaustion owing to the quantity of blossom, coupled with the drought of May and June. The generally satisfactory nature of the fruit crops is probably due to the partial rest from cropping in 1913, and thoroughly ripened wood. *E. C. Parslow, County Offices, Dorchester.*

—— The season here is better than usual for fruit, as we escaped the disastrous frosts in May. Apples, Pears and Plums bore a large quantity of bloom, and the trees are now breaking their branches. Occasional rain is causing the fruit to swell, and Apples, Pears and Plums so far are in excellent condition. Small fruits in general showed great promise, but the drought caused them to ripen rather prematurely, so that the quality was bad and the season short. The soil is chiefly sandy ironstone, which causes Apples and Pears in an average season to colour beautifully, and also ripens their wood. *H. Kempshall, Abbotsbury Gardens, Abbotsbury.*

Hampshire.—The fruit crops in this district are more favourable than for some years past. We escaped the frost in May that caused such havoc in the Midland and Northern districts, and not a single black eye was observed in the Strawberries. Apples are very plentiful. Pears in some varieties are numerous, while others are thinly cropped. Plums are abundant, so also are Cherries. Peaches and Nectarines are bearing very good crops. Apricots are fairly plentiful, and small fruits, including White, Red and Black Currants, Gooseberries, Loganberries, Newberries, Wineberries and Raspberries, are all carrying enormous crops of fruit of first-rate quality. Strawberries promised well, but the continued drought affected the plants badly, and a great deal of the fruit failed to develop. Altogether the 1914 fruit crop promises to excel the records. *Lewis Smith, Cadland Park Gardens, Fawley, Southampton.*

—— Considering the amount of blossom, the Apple crop is lighter than might have been expected; still, it is a good average. Pears are very good, and the crop average. The Plum crop is very good indeed, and more free from aphis than general. Apricots do not seem to thrive in this locality for some reason. The crop is very scanty, although the trees were a mass of blossom and well protected at the time. Small fruits are good with the exception of Raspberries, which were almost destroyed by frost on the nights of May 25 and 26. Black Currants and Gooseberries are heavily cropped. The Strawberry crop was light for the same reason as Raspberries, although the quality was good, but the season was short in consequence. *A. G. Nichols, Strathfieldsaye Gardens, Mortimer, R.S.O.*

—— Apples are a good crop except Bramley's Seedling and Lane's Prince Albert, which are only fair. These trees bore heavy crops last year. Pears and Plums bear average crops, the latter of bad quality; many of the fruits are deformed, and will eventually drop. Peaches and Nectarines on walls are bearing well. Strawberries have been good, but the fruit rather small compared with last year. All small fruits yielded good crops, especially Black and Red Currants, these being of exceptionally fine quality. *A. J. Legge, Dogmersfield Park Gardens, Winchfield.*

—— On the whole the yield of fruits in this district is a good one. Considering the late frosts experienced when the trees were in flower, very little damage was done. All trees are looking remarkably well. *H. Martin, Bartley Lodge Gardens, Cadnom.*

—— The crop of outdoor Peaches is exceptionally fine, and the trees are the picture of health. Raspberries and Strawberries suffered somewhat from late frosts. *Henry Tullett, Ashe Park Gardens, Overton.*

—— The Apple crop is very fine indeed, though many fruits have fallen owing to drought. The trees are exceptionally free from all insect or fungous attacks, and the fruit is swelling freely. Varieties carrying the best crops are Bramley's Seedling, Warner's King, Lord Grosvenor, Mère de Ménage, Worcester Pearmain, Cox's Orange Pippin, Ben's Red, Beauty of Bath, and Blenheim Pippin. Outdoor Peaches are carrying heavy crops, the trees being quite healthy. Standard and wall Plums are doing well. Bush fruits are bearing heavy crops, especially Black Currants, Gooseberries and Raspberries. Strawberries bore heavy crops, but the season was short owing to drought. Royal Sovereign, The Laxton and Leader are the varieties most grown. The soil is heavy loam over clay, with chalk below at variable depths. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

Kent.—Apples appear to have benefited by the brilliant sunshine and hot, dry weather. At the present time these are looking remarkably well, though they are beginning to drop now, and need rain badly. Norfolk Beauty here is doing well. It is a good, healthy grower. There is a big crop of Cox's Orange Pippin. Pears: All the market kinds are heavily cropped, including Conference, Fertility, and the older varieties. Plums: Victoria and Prince of Wales have been thinned owing to the heavy crops. *George Woodward, Barham Court Gardens, Maidstone.*

—— The late flowering of all fruit trees favoured setting, but the drought of June considerably thinned the Apples. The soil is loam on lower greens, and the position is exposed, sloping to north and east. *G. Bunyard, Royal Nurseries, Maidstone.*

—— The crops are not heavy, neither is the size of the fruits large, owing to the prolonged heat and drought, but the quality and flavour are excellent. *Geo. Fennell, Bowden, Tonbridge.*

—— The fruit crops in this part are good and heavy, but the fruit is not so fine as usual, the dry weather being the cause. Cherries are yielding well. The soil here is laid over a chalk subsoil, which requires much water. *J. T. Shann, Betteshanger Park Gardens, Eastry.*

—— But for the drought the crop of Plums would have been very much over average, but none of the storms reached this district, so most of the fruit was shed. Strawberries: A very marked difference (resulting mainly from the drought) was shown between the two-year-old plants and those of last year's runners. The fruit "set" was in both cases very large, but the drought caused that on the two-year-old plants to dry up and prove small. On the other hand, the last year's runners, notwithstanding the drought, proved exceptionally fine, Givon's Late Prolific producing excellent specimens. The soil is stiff, deep loam. *Charles E. Shea, The Elms, Foots Cray.*

—— Owing to the heavy rainfall in March and the early part of April, followed immediately by drying winds, it was very difficult to get the ground into a good, friable condition. Strawberries passed through the winter well, and showed a good deal of bloom, but owing to the long continued dryness did not develop so well as usual. The early varieties were quickly over, and in the case of the later sorts many of the smaller berries did not swell. Cherries were very good. At the time of writing both Pears and Apples look very promising. The soil here is of a heavy, retentive nature. *J. G. Weston, Eastwell Park Gardens, Ashford.*

Middlesex.—Peaches and Nectarines are bearing very heavily and the trees look well. The weather was fine when the trees were in flower. Some varieties of Pears are bearing very satisfactorily. Apples and Plums yield an average crop, and the same may be said of all soft fruits. Our soil is light and needs much artificial watering and feeding in dry weather. *H. Markham, Wrotham Park Gardens, Barnet.*

—— Plums this year are yielding badly. This is the fifth year of failure. *Wm. Poupart, Marsh Farm, Twickenham.*

—— The fruit crops on the whole are well up to the average, and the quality is good. Apples are abundant in most varieties, but in the case of Dumelow's Seedling the yield is extremely low, and in places almost absent. Keswicks appear to be very full. Amongst Pears, Williams' Bon Chrêtien are a good crop this year. Plums are abundant, especially Early Rivers and Victoria; but silver leaf disease is prominent. Gooseberries are better than anticipated, but almost every plantation now contains some American Gooseberry mildew, partly the result of distribution by excessive and forcible spraying. Raspberries and Currants are good. *John Weathers, Park View, Isleworth.*

—— The fruit crops in this district vary considerably. Some gardens suffered from the effect of the frost on May 25 and 26. Fortunately we escaped severe injury. Apples are a good crop, especially a few trees of Cox's Orange Pippin and Lady Sudeley, which required thinning, so thickly did the fruits set. Pears are bearing a fairly good crop, the best being Duroudeau, Souvenir du Congrès and Beurré d'Amanlis. Strawberries have been plentiful, but the fruit did not keep well owing to heavy thunderstorms. Many of the finest fruits of the mid-season varieties decayed. Laxton's Utility did well and is one of the best-flavoured varieties. International is a large fruit, but requires further trial, being a new variety. The silver leaf disease is very bad again in the Plum orchards in this neighbourhood. *James Hawkes, Osterley Park Gardens, Isleworth.*

—— The fruit crops in the Thames Valley are not satisfactory. There has not been a good crop of stone fruit for the past five years. *W. Bates, Cross Deep Gardens, Twickenham.*

—— After several bad seasons, this is a good one by contrast. Apples, Pears and Plums were a fine sight when in bloom, but Plums dropped their fruit by reason of the cold winds in April. The frost in May destroyed the young shoots of some Walnuts, but certain trees in this district bear a very heavy crop. The soil here consists principally of gravel with a small proportion of soil, and very soon dries out. *Wm. Fulford, The Nurseries, Hanworth.*

—— Our fruit crops are this year most satisfactory, with the exception of Plums. Damsons are good. Insect pests have not been more troublesome than usual. The Cherry crop is first-rate, and the trees look well; this crop rarely, if ever, fails us. I note that Strawberries are backward in making runners. The soil here is a light loam, resting on gravel, which overlies the London clay. *Jas. Hudson, Gunnersbury House Gardens, Acton.*

Surrey.—We had an excellent all-round promise of fruit, but the frosts at the end of May and the long period of drought played havoc with most crops. Our soil is very light and sandy. *S. T. Wright, R.H.S. Gardens, Wisley, Ripley.*

—— The fruit crops here are somewhat above the average. Apples are very satisfactory. Pears also promise well. Plums are good, both kitchen and dessert varieties. Cherries have borne fine crops of good quality. Peaches and Nectarines are bearing well, and the trees are healthy and free from blister, which is unusual for this locality. Apricots are only bearing an average crop, but the fruit promises to be good. Small fruits generally are good; Gooseberries have yielded a very heavy crop. Strawberries were not so good as usual; frost in April destroyed a great proportion of the early flowers, and the later flowers were destroyed on May 24 and 25, when we registered 7° and 8° of frost respectively. The soil is a porous loam with gravel subsoil. *Geo. Kent, Norbury Park Gardens, Dorking.*

(To be continued.)

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands, for the week ending August 22, is furnished from the Meteorological Office:—

REMARKS ON WIND AND WEATHER.

At the commencement of the week the anticyclone, which had previously moved away from these islands in a north-easterly direction, expanded southwards again, and occasioned a renewal of fair, dry weather over the entire country. The wind was at first light to moderate, from between north-east and south-east, but after the 16th, when barometrical pressure became very uniform, the easterly current was replaced by light, variable breezes.

Towards the middle of the week the anticyclone began to withdraw to the eastward, while a large shallow area of low pressure extended gradually over the United Kingdom from the Atlantic. In Scotland the wind remained for a time rather variable, but over England and Ireland a light breeze from the west and south-west sprang up. The weather at the same time became generally unsettled. Rain fell in most of the western and northern districts on the 20th, and thunderstorms, or thunder only, occurred in nearly all parts of Great Britain on the 21st. At Scarborough, Skegness and Great Yarmouth the accompanying rainfall amounted to about 1.0in., and at Glasgow a shower in the afternoon deposited 0.38in. in ten minutes. At the close of the week a deeper depression arrived off our western coasts, and occasioned freshening southerly winds in Ireland and the west of Scotland. Coast mists and fogs were unusually prevalent, especially in the west. On the morning of the 20th the whole of the Irish coast and the neighbouring seas and channels were enveloped.

THE WEATHER IN WEST HERTS.

Week ending August 26.

Another Warm and Dry Week.—Throughout the past seventeen days there have occurred only two which were unseasonably cold, while on six days the highest reading in the thermometer screen exceeded 75°. During the same period the nights have also proved, as a rule, warm, but not so unseasonably warm as the days. The ground is at the present time about 2° warmer than is seasonable both at 1 foot and 2 feet deep. Rain has fallen on only four of the last seventeen days, and to the total depth of less than a quarter of an inch. The ground has now become very dry—indeed, no rainwater at all has passed through either of my percolation gauges for a fortnight. The sun shone on an average during the week for 6¼ hours a day, which is half an hour a day in excess of the usual duration for this period in August. The first two days of the week were very calm, the average rate of movement of the air at 30ft. above the ground on each of those days being less than a mile an hour. Since then light airs have mostly prevailed. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 4 per cent. *E. M.*

Obituary.

Thomas Mansfield.—Thomas Mansfield, one of the oldest florists in Lockport, New York, U.S.A., died on the 24th ult. He was a native of England, and settled in America about 50 years ago. He established the first retail florist's business in Lockport about 25 years ago.

Henry Robert Oubridge.—We regret to record the death of Mr. Henry Robert Oubridge, of the Church Walk Nurseries, Stoke Newington, N., which occurred suddenly on Wednesday, the 19th inst. Mr. Oubridge had been in business at the Church Walk Nurseries for the past thirty-one years, in succession to his father, the late Mr. Robert Oubridge. He was an active worker on behalf of many local charities, and took the keenest interest in local institutions and societies. He was a member both of the Hackney and Stoke Newington Chamber of Commerce, and had been chairman and hon. treasurer of the Stoke Newington and District Horticultural Society since its inception in 1911. So recently as December 4 of last year, on the occasion of this society's third annual dinner, the Mayor of Stoke Newington (Alderman H. J. Ormond, J.P.) handed to Mr. Oubridge a painting of himself as a gift from the members of the society. Mr. Oubridge leaves two brothers and eight sisters, besides his widow and three sons.

Answers to Correspondents

Apples with Brown Spots : *T. P.* The fruits are affected with Apple rot. This fungus grows on dead and cankerous shoots, and the spores become washed on to the fruits by rains. Remove all dead and cankered shoots and burn them. Next season spray the plants with the Bordeaux mixture before the buds open, and again at intervals.

Banana Diseased : *M. B.* (*Java*). The fungus present, Gloeosporum musae, is a well-known pest of Bananas, and grows on dead leaves and fragments of Musas on the ground. All such should be removed. Dress the soil with quicklime some time before the disease usually appears, or, if you can obtain it in your country, drench the soil with the Bordeaux mixture.

Bougainvillea Failing to Bloom : *Anxious.* You state that the plant has grown very rapidly, and tbis is most probably the reason of its non-flowering; however, you did right to prune the roots, and if you withhold water gradually from now onwards, with the object of getting the shoots perfectly ripened and hard, you may reasonably expect flowers next year. Bougainvilleas require a sunny situation, and you cannot expect success if the plant is growing on a back wall shaded by other plants.

Cherries Failing to Swell : *A. W. K.* An examination of the fruits proves that the trouble is not due to either fungus or insect pests, and we can only attribute it to malnutrition. When the tree is defoliated this autumn make a thorough examination of the root system and see that the border is drained properly. Remove some of the old compost and replace it with a rich mixture containing a goodly proportion of mortar rubbish. In arranging the roots spread them out evenly near to the surface and follow the directions on page 160 for renovating exhausted fruit borders.

Dahlia Stems Gnawed by Wasps : *N. F. P.* We have not before heard of wasps gnawing Dahlia stems, and, without seeing the plants, cannot suggest any reason for their so doing. The sleepy effect produced on them may be due to inulin, a toxic substance found in Dahlia tubers, and probably present also in the growing stems. Are the plants covered with honeydew from aphides on the leaves? Wasps are fond of honeydew.

Gooseberry Leaves : *H. C.* The leaves are attacked by English mildew, which is not very harmful to the crop.

Growing of Sugar-Beet : *C. P.* The system of cultivation recommended by Messrs. Sutton is as follows : The Beet usually follows a straw crop, and the four years' rotation is found to answer well. The land should be deeply worked in the autumn and enriched with farmyard manure at the rate of 10 to 15 tons per acre. It will seldom be necessary to use the plough again in spring. A good seed-bed can generally be obtained by the scuffler, harrow and roller. Before sowing, 4 to 5 cwt. of superphosphate and about 1 cwt. each of sulphate of ammonia and sulphate of potash may, with advantage, be applied per acre. As a top-dressing apply about 1 cwt. per acre of nitrate of soda once or twice during the season, but the nature of the soil must be considered when determining the quantity of artificials to apply per acre. The seed resembles that of Mangel, and each rough capsule may contain one, two, or more true seeds. Twelve pounds per acre is the quantity usually sown. The space to be allowed between the rows depends on the nature of the soil, but 15 inches is the average distance. The time of sowing varies according to the locality and the character of the land. In England seed can generally be sown from the middle of April to the middle of May—the earlier period is suitable for light soils when climatic conditions are favourable. It is preferable to grow Sugar Beet on the flat rather than on the ridge system. The method of cultivation is much the same as for Mangels, thinning and repeated hoeings being essential operations. The roots should be thinned to a distance of 6 to 8 inches apart in the rows. Sugar Beet grows much more deeply than Mangel, and the use of a fork or some other implement is necessary in lifting the crop. On large Continental farms the work is done by horse or steam power, while on the smaller holdings women are often employed. Twelve to fifteen tons per acre of topped and cleaned roots is regarded as a good crop, but the weight varies according to the soil and methods of cultivation. The percentage of sugar varies : a stock of Beet giving 15 or 16 per cent. of sugar is generally considered excellent, although higher percentages are often obtained.

Hybrid Tea Roses for Autumn Blooming : *Dorset Gardener.* The following are all good autumn blooming varieties and produce flowers of good quality :—Madame Léon Pain, Souvenir de Gustave Prat, Countess of Shaftesbury, Lieutenant Chauré, Prince de Bulgarie, and Ophelia.

Local Fruit-growers' Association : *J. H. D.* Write to the secretary of the National Fruit-growers' Federation, to which some local associations are affiliated. The address is 2, Gray's Inn Place, London, W.C. Local associations to which you could apply are the Evesham Market Gardeners' Association, Evesham; the Kent Fruit-growers' Association, Sittingbourne, Kent; the Swanwick District Fruit-growers' Association, 8, Beacon Villa, Swanwick, near Southampton; Wisbech Nurserymen's and Fruit-growers' Association, Market Place, Wisbech; Cheltenham Market Gardeners and Fruit-growers' Association, 2, Regent Street, Cheltenham; Hereford Associa- of Fruit-growers, 3a, St. Peter's Street, Hereford.

Names of Plants : *F. W. T.* Physostegia virginiana, False Dragon's Head.—*C. R.* Tilia petiolaris.—*P. C.* 1, Rhus Cotinus; 2, send when in flower; 3, Pseudotsuga Douglasii; 4, Abies Pinsapo; 5, Sequoia gigantea; 6, Cupressus pisifera plumosa aurea.—*Journeyman.* 1, Oenothera fruticosa; 2, Veronica austriaca Prenja; 3, Chrysanthemum lacustre; 4, Helianthus multiflorus flore pleno; 5, Rudbeckia laciniata flore pleno; 6, Artemisia Absinthium; 7, Helianthus rigidus; 8, Verbascum phlomoides; 9, V. Chaixii; 10, Chrysanthemum maximum; 11, Ajuga reptans variegata.—*A. R. S.* 1, Cupressus pisifera plumosa aurea; 2, Juniperus virginiana; 3, Thuya orientalis; 4, T. plicata; 5, Cupressus pisifera plumosa argentea; 6, Thuya occidentalis aurea.—*W. S.* Rubus illecebrosus, a Japanese species, not a hybrid as suggested.—*C. Morley.* Brassia brachiata, native of Central America.

Peaches Decaying : *J. T.* The fruits are affected by the fungus Gloeosporum laeticolor. The disease makes its appearance on dead spurs, and passes on to the fruit. The treatment is to remove all dead spurs and branches and to spray the plant with the Bordeaux mixture before the leaves expand.

Sulphate of Copper and Pond Weeds : *W. E.* The amount of sulphate of copper to use depends on whether the water is running or partially stagnant. A practical method is to put 2-3 lbs. of the material, in lumps, in a loosely-woven sack, which should be dragged through the water in lines at a distance of about 4 yards apart. The Water Lilies need not be removed, as they will not be injured by the copper sulphate.

Sweet Pea Leaf : *W. J. U.* The leaf is a very large one, but not larger than is often seen on Sweet Peas grown under glass. Our record book contains no entry of the size of Sweet Pea leaves.

To Keep Vegetable Marrows : *J. C.* Marrows will keep for a considerable period if cut when fully grown and hung in a dry, frost-proof place. We have seen marrows kept in this way in a dry kitchen until late in winter. They should not be tied by the stalk as this may become detached, but slung up either in fish netting or string. Marrows for keeping should be fully grown, but the seed should not be too ripe or the flesh will be hard. In any case the flesh is a little tough, and needs extra boiling.

Tomato Diseased : *C. F.* The disease is known as Tomato leaf-rust, and may be checked by spraying the plants at intervals with liver of sulphur.

Trautvetteria palmata : *H. L. R.* This plant is a hardy herbaceous perennial, native of North-Western America and Japan. It is commonly called the "False Bugbane." The radical leaves are palmately lobed, with the lobes toothed and cut, while the flowering stems grow from 2 feet to 3 feet high. The "Thalictrum-like" flowers are produced in July and August. The plant thrives well in a moist, shady situation in soil rich in humus.

Walnut Tree Unfruitful : *W. T. Beesley.* There are several varieties of Walnut Juglans regia, some with thick and others with thin shells. Thin-shelled Walnuts are on the whole the best croppers and the best flavoured. Grafted trees come into bearing sooner than seedlings, but the common Walnut seldom fruits before the trees are 15 years old. Few trees need so little attention as the Walnut, and only after many years of heavy cropping do old plants show signs of exhaustion. A heavy dressing of well-rotted farmyard manure, waterings with diluted liquid manure, and a good dressing of bone-meal as far as the branches extend will assist the tree to recover. If your tree appears healthy the assumption is that it is a shy fruiting variety.

Wasps : *G. H.* The wasp you send is a worker of Vespa Norvegica, commonly called the Gooseberry wasp from the frequency with which it makes its nests in Gooseberry bushes. When a wasp's nest is taken it almost invariably happens that some of the wasps escape the general destruction owing to their being absent at the time, especially when the operation is conducted in the evening, and these wasps on finding their home missing will often begin another; but as the queen was killed with the majority of her subjects the survivors lack the stimulation of her presence, and the attempt to start another nest is not, as a rule, very successful, and although as, in your case, a small nest may be built, no eggs can be laid in the absence of the queen, unless an exceptionally well-developed worker is able to take the queen's place in this respect, in which case drones only would be produced, if the eggs could be carried through to maturity. The queens in a normal nest leave the home to mate with the drones, and are not found at large to any extent afterwards, as they seek hibernating quarters. The young queens, in any case, would not lead swarms, as wasps do not swarm, and a young queen would not assume command of any such band of survivors as has been mentioned.

Working Manager : *Z. W. X.* The information given in your letter is not sufficient to show that you are a partner. If you are the working manager of the nursery you would probably be entitled to a month's notice. The period of notice is mutual, and you would be entitled to give the same length of notice as you receive. You could not make any claim in respect of the holidays you have not taken or for any extra work unless you had a special agreement as to this.

Communications Received.—U. R. S.—E. M.—Cherry—Constant Reader—J. H. R.—J. K. W.—Oxted—E. F. G.—R. O. W.—F. N.—A. W. K.—T. H. C.—F. W. T.—D. A.—O. H. H. (thanks for 5s. for R G.O.F. box)—T. P.—M. S. A.—C. P. R.—W. B. H.—M. O. A.—S. L. B.—S. A.—W. E.—E. B.—H. P. M.—G. W. L.—S. C.—W. B. S.—V. N. G. and Co.—E. P. P.—R. Farrer, Western China.

THE
Gardeners' Chronicle
No 1,445.—SATURDAY, SEPTEMBER 5, 1914.

CONTENTS.

Alpines at home .. 170
Apple trees on grass land 180
Botanical Magazine, the 179
Chemical manures and the maturing of fruit 179
Fruit crops, remarks on the condition of the 181
Green wood 179
Heredity 176
Hints for collectors .. 173
Insect pests of Carnations 172
Japan, the camphor industry in 180
Javanese insect galls .. 179
Kauri, age and growth of the 179
Lilium Sargentae .. 180
Market fruit-garden, the 169
New Zealand, alien plants naturalised in 179
Orchid notes and gleanings—
Brassia brachiata .. 171
Potato-planting, experiments in 180
Primula obconica .. 181
R.H.S. appeal 176
Scotland, notes from .. 182
Siberian Yellow Pine .. 180
Societies—
Banbridge Hort. .. 183
Leicester Flower Show 182
Sterilisation of soil . 179
Sweet Peas cultivated under glass 172
Turnip flea beetle, trap to catch .. . 180
Viola trials in Scotland 172
War items 177
Wasps 181
Week's work, the—
Flower garden, the .. 174
"French" garden, the 175
Fruit under glass .. 174
Hardy fruit garden, the 174
Kitchen garden, the 175
Orchid houses, the .. 174
Plants under glass .. 175
Wood, preservation of, by steaming 179

ILLUSTRATIONS.

Cyrtosperma Johnstonii 177
Pear-leaf slugworm 184
Primula obconica, double variety of 181
Sweet Peas grown under glass 170, 171
Trap to catch Turnip flea beetle 180

THE MARKET FRUIT GARDEN.

Drought in August was even more severe than in any preceding summer month, and the temperature was generally higher. The scorching sunshine has ripened late Plums and mid-season Apples prematurely. If memory serves, it has never before in my experience been necessary to pick some of the Monarch Plums or Worcester Pearmain or James Grieve Apples before the end of August; nor do I remember to have seen previously Pond's Seedling Plums fully coloured on August 28. Similarly with cooking Apples, Royal Jubilee, Queen and Warner's King were dropping so extensively before the end of the month that they had to be picked whenever receptacles were available. As the crops of all these fruits were tremendous, as were those of strictly early Apples, including Domino and Lord Grosvenor, the result was such an accumulation of stocks that available empties and time for packing were not sufficient for such prompt marketing as was desirable. Plums, of course, were sent off on the day of gathering, and the necessity of this action rendered the glut of Apples in the fruit room and barn all the worse.

Tardy Lessons from Experience.

In connection with the preceding remarks it is worth while to record the lessons taught by the facts mentioned. One is that it is a great mistake to plant many Apple trees the crops of which will run into the time of Plum-picking. Another is that the earliest Apples, at least when the crops are heavy, should be marketed as far as possible before Plum-picking begins. Even if not fully mature, they sell better then than later, because consumers neglect Apples to a great extent when Plums are available. I made more per half-sieve of Early Julyan thinnings, simply picked into the baskets without grading, weighed, covered with newspaper, and sent to market direct from the orchards, than I realised on the average for firsts and seconds sold when the fruit was mature. It may be added that the green thinnings of Victoria Plums made more than the fully-coloured fruit sent to market later. It is to be borne in mind, however, that these results were partly due to the gluts of early Apples and Plums, and partly to the effect of the war on prices. It is very seldom that we have in the same season such great crops of Plums and early Apples, or at least yields so great in proportion to the demand—reduced this season by the war—as those of this year. Still, with allowances, my remarks as to marketing early Apples hold good.

A Relative Glut.

The term "relative" is connected with the glut of fruit in the markets, because this is in great measure due to the war, and has occurred in spite of the almost complete cessation of imports. If the reports of immense damage done by late spring frosts to Plums and Apples were not greatly exaggerated, there cannot have been over-average crops in the country, apart from Kent and a few other southern counties. Results prove, however, that the crops were much in excess of the demand, as reduced by the war. In the circumstances, it may be supposed that the great yields of Apples and Plums in Kent would have sufficed by themselves to have kept the markets fairly supplied. Like my own district, Kent generally escaped damage from spring frosts, and the crops of Plums and early Apples were extraordinary.

A Season of Waste.

Probably there has never been a season in which more Apples have been and will be wasted than in the present one. Such premature dropping of almost all varieties as there has been and is in my orchards has never been approached before, although there have been no strong gales, such as often occur in August. The masses of so-called windfalls, moreover, usually saleable at a low price, have not paid for picking up. Nearly all mine have been either sold at 4d. to 6d. a bushel, or given away, except for the great quantities which rotted a few days after having been picked up. Where pigs are kept the animals have had most of these damaged Apples. They include Worcester Pearmains, many of them of full size and beautifully coloured, but all bruised more or less by dropping, and many pecked by birds. Under Cox's Orange Pippin trees the ground is thickly strewn with fruit, not worth picking up, because not half mature. In ordinary seasons windfalls and small Apples can be sold at low prices to hucksters and jam factories; but this year both these classes of buyers have been hitherto very shy customers. Some of the factories refrained altogether from buying Apples for a time, in consequence of the rise in the price of sugar and the cheapness of Plums. In one case the offer of windfalls and small Apples at £3 on rail not many miles from a jam factory met with a reply to the effect that the price was much too high, as Plums were freely offered on the same terms. The intense heat of the latter part of August, moreover, prevented even sound gathered Apples from keeping as well as usual, while the occasional impossibility of getting empties added to the difficulties of the situation.

The Prospect for Late Apples.

As it is quite certain that the yield of late Apples, such as will keep over Christmas, will be much below average, there is hope of better returns for them than for early and mid-season varieties. It can hardly be hoped that the war will be finished before the time for the bulk of American and Canadian supplies to arrive, and if it is not ended, those supplies will be more or less reduced, in all probability. It can scarcely be doubted that the relations of supply and demand will mainly depend upon the fortunes of the Allies. The prospect of an early victory on a great scale, and the consequent hopes of the restoration of peace, would do much to restore the ordinary conditions of living, and thus increase the demand for fruit. At the best, growers generally will lose very heavily by the war, and all that is to be hoped is a mitigation of their losses by means of improved sales.

Net Receipts for Fruit.

Few people besides those who market fruit know how heavy the deductions are which come off the market price in getting at the grower's net receipts. To take the case of Plums, for example, the picking in my case costs 3d. per half-sieve of 28lbs. for Early Rivers and Czars, and 2d. for larger Plums; and packing and carting to the railway station, just under two miles, costs at least 1d., as the expense of tissue paper and the cutting and shaping of benders have to be taken into account. The rail carriage by goods train to London, 50 miles, is a minute fraction under 3d. per half-sieve, including delivery. The salesman's commission is 3d., and market toll or porterage is charged at 1d. Now let us apply these expenses to a consignment of 65 halves of Czar Plums, for which the gross return was 1s. 3d. per half-sieve, or £4 1s. 3d. in all. The deductions were 16s. 3d. for picking, 5s. 5d. for packing and carting to the station, 15s. 7d. for rail carriage, 5s. 5d. for toll or porterage, and 16s. 3d. for commission.

These items amount to £2 18s. 11d., which, taken off £4 1s. 3d., left £1 2s. 4d., or 4½d. per half-sieve of 28lbs. net. This was the worst return for Czars; but there were large quantities only 3d. per half-sieve better. If memory serves, Czars have never before sold lower than 2s. 6d. Some Early Rivers made as little as 1s. 6d., with expenses as above to come off. Usually they make 3s. 6d. to 5s. Some Gisbornes were sold at 1s. 3d., less expenses. One big consignment of Victorias gave as bad a net return as the worst one of Czars. In consequence of the severity of the drought and the overloaded condition of the trees, my fruits of Early Rivers and Victoria were small; but the Czars were of fair size. Net returns from local markets were much less low than those from London, both rail and market expenses being lower. Moreover, during the beginning of the marketing of each variety prices were about double those of the lowest. It remains to be seen what the late varieties, usually high in price, will make. These include Pond's Seedling, Monarch, and President.

Only a few returns for cooking Apples have come in up to the time of writing, excepting those of an immense crop of Early Julyans; but quotations for firsts are nearly all 2s. to 2s 3d. per bushel, Warner's King alone being priced so high as 2s. 6d. The expenses to come off in cases of consignments to London are a little less than those of Plums, the railway rate being lower. The cost of picking, which is done by the day, is probably a little less also; but packing costs more, as grading comes in for Apples. On the whole there is not more than a penny per half-sieve of Apples less to come off the gross return than from that of Plums. Therefore, the net return for Apples sold at 2s. a bushel is only about 1s., or 6d. per half-sieve to compare with 4½d. for the worst case of Plums. This is the net return for firsts. The expenses are the same for seconds, sold at 1s. 6d. per bushel, leaving only 6d. per bushel net, or 3d. per half-sieve to compare with the net return of Plums given above. Here, then, we have a net return of 3d. to 6d. per 20lbs. of Apples, to compare with 4½d. to about double that sum for Plums, the bulk of which made 1s. 6d. to 2s. 6d. gross.

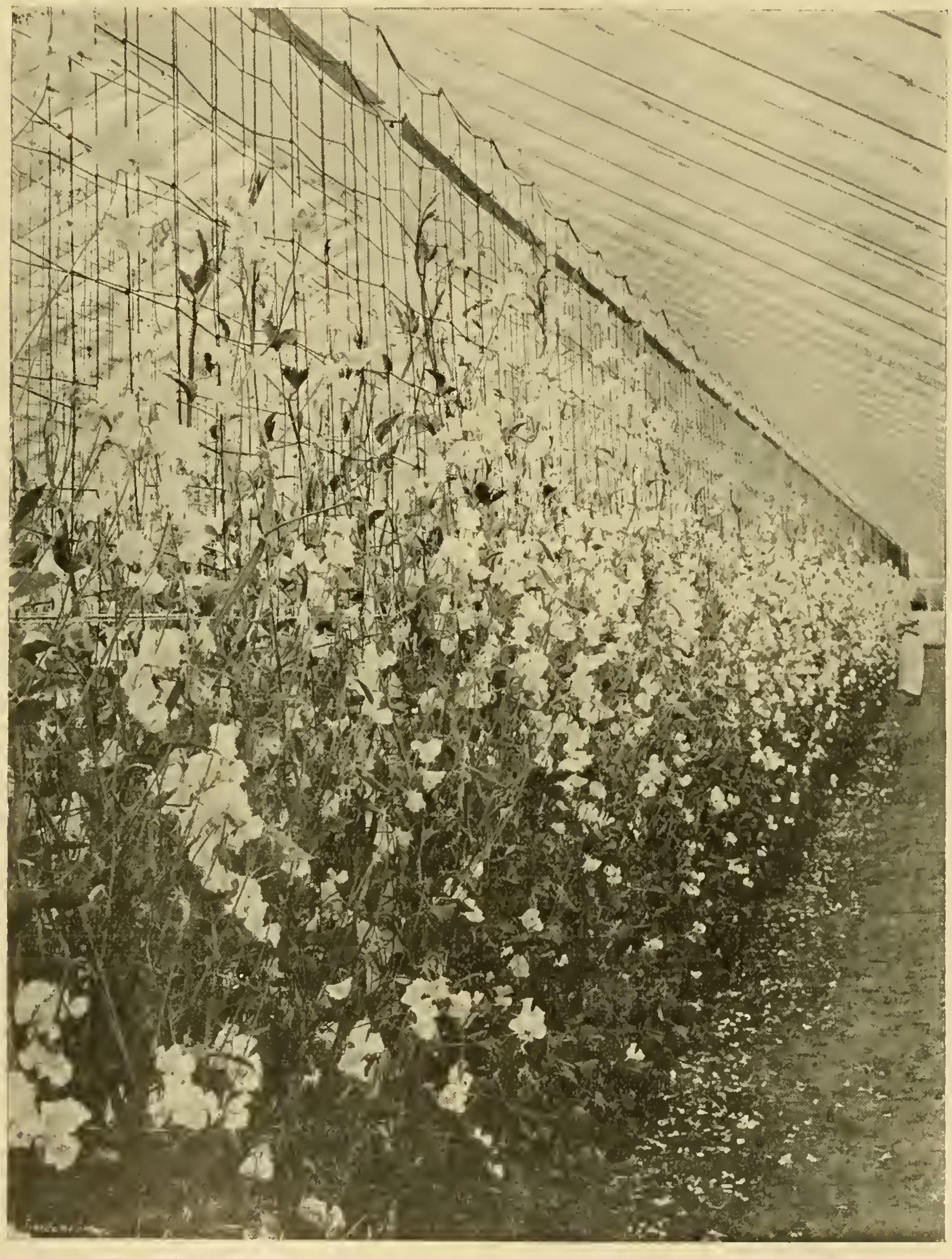


Fig. 68.—Sweet Pea Alfred Watkins as grown for seeding at Marks Tey. (See p. 172.)

The only dessert Apples sold by me extensively at present are Beauty of Bath and Mr. Gladstone. Both started fairly in price, but fell off badly at the finish, the former variety going down to half its usual market value. Worcester Pearmain has been selling in London at 1s. 6d. to 2s. 6d. per half-sieve—wretched prices for this favourite market variety.

Cobnuts are making only 3d. per lb. in London, and Filberts no more than 2d. to 2½d., and possibly the prices will have fallen by the time that these remarks are published. Peaches are quoted at 1s. 6d. to 9s. per dozen. The bulk of the best late hothouse varieties are selling at 6s. per dozen, as compared with 18s. made last year, all rail and market expenses to come off. Grapes, apart from Muscats and Canon Halls, are priced at 4d. to 1s. 6d., the bulk of good hothouse fruit going at 7d. to 9d. *A Southern Grower.*

ALPINES AT HOME

A WEEK AT MONT CENIS, 6,400 FEET ABOVE SEA LEVEL.

In spite of all that has been written in praise of Mont Cenis the English seem curiously ignorant of the charm of the region. In normal times the journey is an easy one. Leaving Victoria at 11 a.m., you are at Modana at 9.30 a.m. next day. You can either stay a day there and search the neighbourhood for flowers which love chalk, especially Cypripedium Calceolus, or you may go on at once to Lanslebourg, where the woods and fields contain many treasures, such as Ononis cenisia, Adonis flammea, Atragene alpina, Pyrola uniflora and other interesting plants. After the stay of a day or two you can, after July 1, take the motor-'bus to Mont Cenis. If you prefer to go on foot it is a delightful two hours' walk through woods and over pastures to the top of the Pass, and an hour's gentle stroll will take you to the Hotel de la Poste. This walk is a revelation to those who have never seen Viola calcarata in profusion. It meets the eye everywhere in great sheets of colour—yellow, purple, blue, white, yellow and brown, and many other charming shades. As you near your destination you cannot help noticing a curious geological formation, especially on your right as you reach the foot of the slope. This formation, be it magnesian limestone, as some aver, or coral, according to others, extends in front of the hotel and both north and south of it, and contains an exceptional number of most interesting plants, so that you may easily spend a morning without exhausting its treasures. Gentiana verna var. angulosa is everywhere. Erysimum pumilum, Potentilla aurea, Globularia cordifolia, Dianthus neglectus, Aretia Vitaliana, Linum alpinum, Saxifraga Aizoon, Alsine laricifolia, and many more. One of the great charms of the place is the lake, a walk round which will send you home heavily laden with Anemone alpina, both white and yellow, the outside of the sepals being indescribably beautiful in various shades of blue. The ground in many places is pink with Primula farinosa. Androsace carnea is everywhere. In the woods through which the path winds Aquilegia alpina is abundant, as well as Pyrola rotundifolia. Elsewhere the ground has been taken possession of by Ranunculus aconitifolius and Thalictrum aquilegifolium; the stony stretches by the rivers are brilliant with Linaria alpina, in its usual form, as well as in the variety concolor and another. In the woods you will come upon Cortusa Matthioli, Saxifraga rotundifolia often trying to pass itself off for the rarer plant. Here, too, are found the finest plants of Soldanella montana. By the water's edge is a beautiful Orchis, of which I do not know the name, but it has gloriously mottled leaves and dark-crimson flowers. This, too, is imitated by a Pedicularis, but little inferior to the Orchis. Another charm lies in the immense variety of walks open to the visitor. You may wander everywhere without let or hindrance, whether up the steep ascent to Nunda in search of Geum reptans, Ranunculus glacialis, Viola cenisia, Campanula cenisia and Gentiana brachyphylla, or, if you prefer more level ground the various folds of the hills have each a character of its own, and no more pleasant way of passing three or four hours can be imagined than following first one of these folds and then another, each adding some new charm. In the course of such a walk may be discovered Lloydia serotina, Loiseleuria procumbens, Primula pedemontana, Petrocallis pyrenaica, Nigritella rubra, and many another dainty treasure. Taking your lunch with you, you may go and hunt the moraine to the north of the Fort, where you will find Campanula Allionii in abundance, as well as Thlaspi rotundifolium, though the latter is here a rare plant. Viola cenisia also is abundant in certain spots. An expedition in the direction of the Little Mont Cenis will reward you with Saxifraga caesia, Primula pedemontana, and another with deep purple flowers, of which I purposely omit the name as the authorities do not as yet seem to have made up their minds as to what it should be called. I might add a list of over a hundred other Alpines which I saw in flower, but enough has perhaps been said to show what a happy hunting-ground this is. The beauty of the scene cannot but appeal to all. I will end with a word of caution. If the English are blind to the charms of the place, the Italians and French are fully alive to them, and on a fine Sunday there will be two hundred or more assembled at *table d'hôte*. On such a day it is as well to take your luncheon with you and wander into the hills. One more word: it is a pity not to take with you a comprehensive book on the flora of Switzerland or of Northern Italy, as it is impossible for any but a really good botanist to identify the very large number of plants which this district produces. The landlord, Monsieur Victor Faure, has a good knowledge of some of the local plants and will render all the assistance in his power. The food is sufficient and good, and the terms moderate.

The plants named, except Cypripedium Calceolus and those noted in the neighbourhood of Lanslebourg, were all in flower from June 18 to 28. *A. C. Bartholomew, Park House, Reading.*

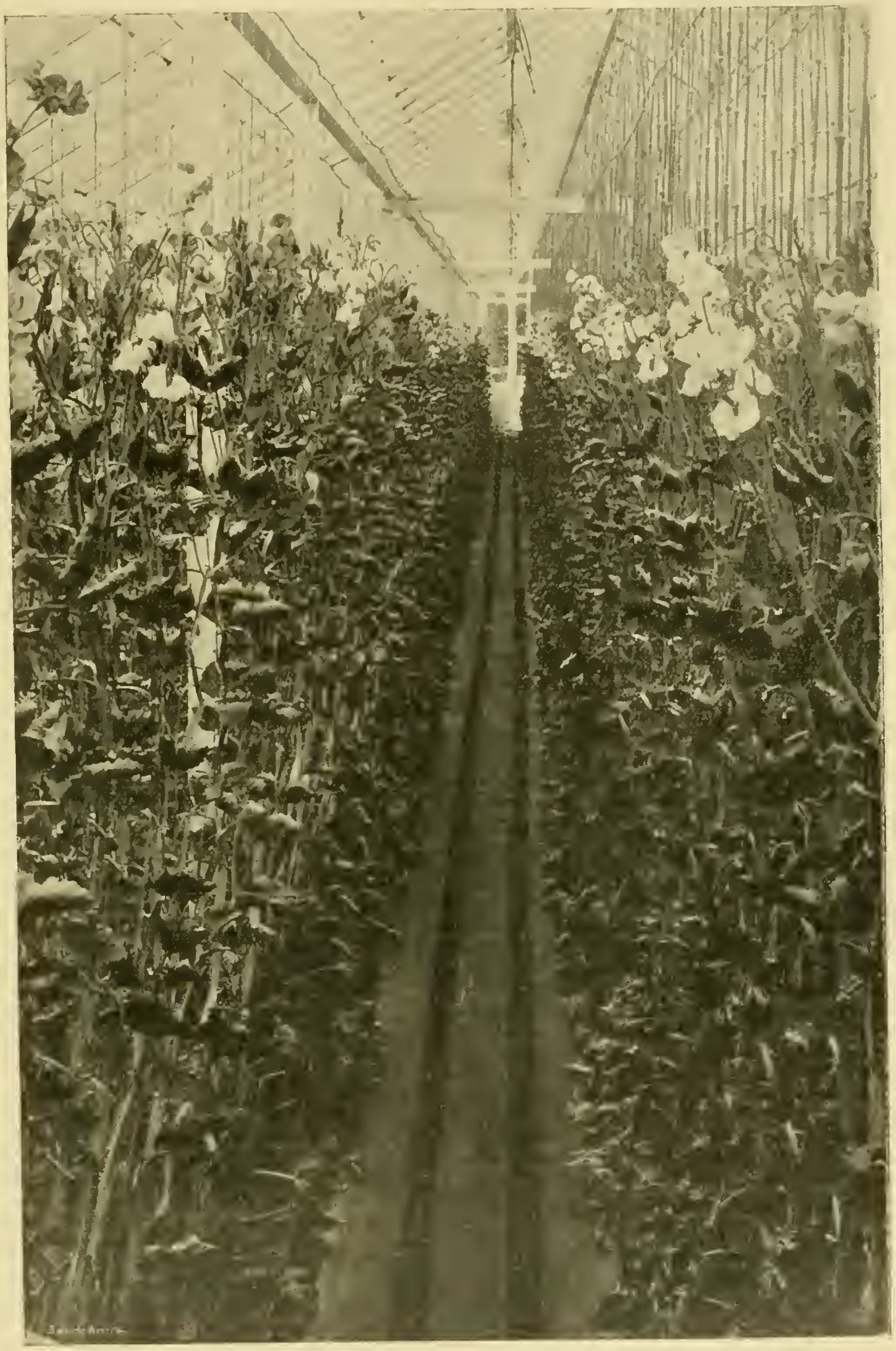


Fig. 69.—sweet peas under glass at messrs. dobbie's nursery.
(See p. 172.)

ORCHID NOTES AND GLEANINGS.

BRASSIA BRACHIATA.

A flower of this large and beautiful Central American Brassia is sent by Mr. C. Morley, gr. to H. Thorburn, Esq., Craddock Villa, Bishop Auckland It was taken from a spike of several blooms. The dorsal sepals and petals are 3 inches long, the lateral sepals 7 inches, all greenish, spotted on the lower half with chocolate red. The lip, which is 2 inches long and 1 inch wide, is yellowish-white, with distinct claret spots, some of which are raised, and all in the mature flower having a bright magenta ring around them. Its size and quaint construction suggests that it might be a useful subject in the hands of the hybridiser seeking for novelty of form. Crossed with Miltonia or other of its showier congeners it should give good results.

INSECT PESTS OF CARNATIONS.

I.—THE RED SPIDER (TETRANYCHUS BIMACULATUS).

The eggs of T. bimaculatus are small, round, pearl-like objects, and although somewhat variable in size are generally about 1-150th inch in diameter. They are laid singly, and not attached to the host plant by protecting webs, but are held by strong filaments or are to be found on the loose web which is ordinarily spun under infested leaves. The incubation period varies from 4½ to 10 days, according to temperature and general climatic conditions. The larvae are minute, somewhat globular objects with three pairs of legs. This condition lasts until the first moult, from which the mites emerge as nymphs, with eight legs, and which, except for size, are similar to the adults. The larval and nymphal stages vary from 8 to 16 days, according to the conditions of temperature and climate. The adults of T. bimaculatus are small greenish-yellow, or, in some cases, reddish mites, ranging in size from 1-100th of an inch in the male to 1-50th of an inch in the female. The sexes are very distinct, and the differences may be noted by means of an ordinary hand lens, the female being much the larger with a broad, rounded abdomen, while in the male the abdomen is narrow and tapering. The life-cycle from egg to adult is, on the average, 25 days.

Some horticulturists use a weak salt or soap solution, but the general method of control is continual spraying with water.

II.—THE ONION THRIPS (THRIPS TABACI).

The adult female of this pest of Carnations is pale yellow in colour, from 1-25th to 1-20th of an inch in length, with brown eyes and dusky legs and antennae (feelers). The wings are faintly yellowish, their fringes being dusky. The male larvae are somewhat smaller than the female and of a darker colour—often with a greenish tint; the eyes are red. As suggested by its popular name, this pest is often found on Onions, to which plant it is very destructive. Besides Carnations, T. tabaci attacks Roses and other flowers (wild and cultivated), fruit blossoms, grasses, etc. The thrips are most active on the outside of the buds early in the morning, so that is the best time for applying a spray. A flour paste consisting of from 6 to 8 pounds of cheap flour to 100 gallons of water and applied thoroughly has given excellent results. Needless to state these quantities may be reduced proportionately, according to the area to be treated. Spraying with nicotine extract is also an efficient control method for this species.

III.—THE SPOTTED MILLIPEDE (BLANJULUS GUTTULATUS).

These small "Snake-millipedes" that eat through the roots of Carnations are easily recognised by their narrow, elongate, cylindrical form and their pale, whitish colour, adorned with red spots arranged in series along either side. A dressing of lime to soil infested with this and other species of the genus Blanjulus is a sure remedy, and the plan of dusting soot and lime round each root just before planting has been tried successfully as a means for preventing their attacks.

A recent experiment in France with potassium sulpho-carbonate has dismissed all doubts as to the value of this chemical as an insecticide. Its cost, however, has prevented extensive use by agriculturists, but this question of cost is of less importance in horticulture, where comparatively small quantities are required. The following test was made:—1 part of commercial solution[*] was diluted in 100 parts of water (both by volume) and the liquid was poured from a watering-can in such quantity as to ensure adequate penetration. The rose was removed as the stream of liquid had to hit the soil exactly at the point where the stems emerged. Besides millipedes, slugs, cut worms, earthworms, white grubs and Longicorn larvae were found dead, thus conclusively proving the efficacy of the treatment. Those insects which are buried deep enough cannot escape to the surface, while those who can escape to the surface are easily killed. Tulips and Carnations are not affected by a 1 per cent. solution, and even a 2 per cent. solution may be used. Only when a 5 per cent. solution is employed do Carnations begin to suffer; but there is no object in increasing the strength beyond 2 per cent. The only essential condition is to saturate the soil right through to the depth of the pests buried deepest, and soundings are necessary to acquire certainty on this vital point.

The products of decomposition of potassium sulpho-carbonate are harmless, and the manurial value of the potassium carbonate[†] might be deducted from the initial outlay. Lastly, it is one of those rare insecticides which are not extremely poisonous.

References.

Carpenter (G. H.). Injurious Insects and other Animals observed in Ireland during the year 1908.—*Econ. Proc. Roy. Dublin Soc*, i., pt. 16, July, 1909, p. 602.

Essig (E. O.). Injurious and Beneficial Insects of California. —*Mthly. Bull. Cal. State Commiss. Hortic.*, ii, nos. 1 and 2, January and February, 1913, pp. 30, 37, and 38.

Parker (W. B.). The Red Spider on Hops in the Sacramento Valley of California.—*U.S. Dept. Agric., Bur. Entom., Bull.* 117, May 3, 1913, pp. 10-12 and p. 35.

Molinas (E.). La destruction des parasites du sol.—*Les Progrès Agricole et Viticole*, xxxi, no. 12, March 22, 1914, pp. 374-378. *C. D. G.*

THE CULTURE OF SWEET PEAS UNDER GLASS.

The cultivation of Sweet Peas under glass increases in each succeeding year, which fact may be partly attributed to the finer quality of the flowers grown indoors and partly to the many failures experienced with Sweet Peas in the open. How admirably Sweet Peas respond to greenhouse treatment may be seen on reference to figs. 68 and 69, from photographs taken in Messrs. Dobbie and Co.'s nursery. The manager, Mr. Andrew Ireland, has obligingly furnished us with the following details of cultivation:—

The seeds should be sown in boxes or pots at the end of September or early in October, and allowed to remain in a cold frame or a sheltered corner out-of-doors until after Christmas. By that time they will be hardy little plants possessing plenty of roots, and ready for potting on into small 60-sized pots. When they are potted they should be grown in a greenhouse or close frame. It is surprising how quickly they commence to develop, and at this stage care in watering and airing are the principal requirements. They should be grown under a cool treatment, for if coddled they may make weak, spindly growth. In six or eight weeks after potting they should be shifted into their flowering receptacles, whether pots, boxes, or tubs, or they may be planted in the border of the house. The most suitable compost is formed of good loam, a little decayed stable manure, sand, bone meal, and a dusting of soot. In this mixture the plants will grow well until they reach the flowering stage, when the roots should be fed with manure water twice a week. If cut blooms are required the plants should be thinned to two or three shoots, and then staked and tied. The main growths can be trained into any shape, and when they have reached the top of the house they can be untied and brought down to any height. The variety Mrs. Cuthbertson has grown 22 feet long, being taken down from the roof when necessary. By treating the plants in this way a long season of first-rate flowers, with good stems, is assured. If grown in pots, tubs or boxes for decoration, the shoots may be trained on a framework, or simplicitas netting, which makes a neat, tidy support and will last for several years. A mulch of short manure will help to prolong the flowering season. Sweet Peas are seen at their best under glass, for rain, sun or wind cannot damage them. The following varieties are the best for glass culture:—Charles Foster, Lady Miller, Melba, Lavender George Herbert, Elfrida Pearson, King White, Thomas Stevenson, New Marquis, Wedgwood, Edrom Beauty, Dobbie's Scarlet and Dobbie's Cream.

VIOLA TRIALS IN SCOTLAND.

The exhaustive trials of Violas carried out at Wisley in 1912 and 1914 have been repeated in a trial at Edinburgh for the purpose of indicating how the results in the North compare with those in the South. The trial was conducted by Mr. Robert Fife, of Messrs. Dobbie and Co., who invited other firms to send varieties. Plants were contributed by Messrs. W. Artindale and Son, Sheffield; Alexander Dickson and Sons, Newtownards; John Forbes, Ltd., Hawick; James Grieve and Sons, Edinburgh; Lister and Son, Rothesay; W. H. Morter, city gardener, Birmingham; Chas. Turner, Slough; R. Wallace and Co., Colchester; B. Wood, Liverpool; George Wood, Hawick; besides a large number from Messrs. Dobbie and Co.'s own nursery. In all there were 231 varieties of Violas, 12 Violettas and 6 hybrids of V. gracilis under trial. The plants (6 of each variety) were placed in their flowering quarters early in April, and the growth on the whole was very satisfactory. Some of the old favourites did not do so well as might have been expected, but in the ordinary nursery beds within a stone's throw of these trials they appeared in their usual good form. In order, therefore, to get a proper test it would seem necessary to allow the plants to stand for a period of two years, this being the method adopted at Wisley.

The judging of the trials was undertaken by a committee of well-known Scottish horticulturists. The trials were examined by the committee on August 7, and the following Awards were made:—

White.—(*a*) Mina, Swan, Virgin White (*), Alexandra (*). (*b*) Countess of Hopetoun, Purity (*), Queen of Whites, Snowflake (*).

Cream, Sulphur, or Primrose.—(*a*) Lady Knox, Margaret Wood, Primrose. (*b*) None.

Light Yellow.—(*a*) None. (*b*) Ardwell Gem, Grievei.

Deep Yellow.—(*a*) Bute Yellow, Moseley (*), Perfection, Queen's Park, Redbraes Yellow (*), Mrs. C. B. Douglas. (*b*) Lord Elcho, Kingcup (*), Royal Sovereign (*), Sunshine, Lizzie Paul.

Light Blue.—(*a*) W. H. Woodgate (*). (*b*) Buxton Blue, Perdita.

Blue.—(*a*) Dairymaid, Royal Scot. (*b*) John Young, Mrs. Maclean, Ralph.

Mauve, Lilac, or Heliotrope.—(*a*) *Bridal* Morn, Mrs. Geo. Wood, Maggie Mott (*), Dunbryan. (*b*) Fred Williams (*), Kitty Bell, Mrs. Norris-Elye, Tottie.

Purple and Purple-violet. — (*a*) Archie Grant (*), Eminence, Jubilee (*). (*b*) Rosy Morn.

Crimson.—(*a*) Arabella, Crimson King, J. B. Riding (*). (*b*) Amy Barr.

---

[*] Approximate cost, 32s. per cwt.; specific gravity, 1.200.

[†] The residue left in the soil after the decomposition of the potassium sulpho-carbonate.

Rose or Pink.—(*a*) Lady Clonbrook, Maid of Lorne, Tom Wilson. (*b*) Mrs. J. H. Rowland.

Edged.—(*a*) Jas. Pilling, Harry Bamber, Waverley, Agnes Kay (*), Annabel Lee, Col. Plumer, Jessie. (*b*) Thos. Bell, Mrs Chichester (*), The Mearns.

Bronze.—(*b*) Bronze Kintore.

Violetto.—(*a*) Compacta alba, Lyric, Princess May, Violetta (type), White Dot.

Gracilis Hybrids.—(*a*) Lutea, Purple Robe.

(*a*) indicates varieties of the highest quality for bedding purposes, and (*b*) the next best for the same work.

The varieties with an asterisk received an Award of Merit at the Wisley trials last season. *George M. Taylor, Mid-Lothian.*

HINTS FOR COLLECTORS.*

The following notes on the collecting of botanical specimens are issued for the convenience of collectors and travellers who may desire to send home plants in the living or dried condition, or who may be interested in collecting plants or plant products from the economic point of view.

In collecting unknown plants in the living condition in the form of seeds, tubers, etc., it is desirable that, when possible, herbarium specimens should also be collected by which the plant may be identified. In all such cases the collecting number borne by the dried specimen should also be given to the packet of seeds or the plant sent. Similarly, with native names, it is of great practical value that these should be accurately recorded, both for living and dried specimens, and where both living and dried specimens are sent the vernacular name should be given with each specimen.

1. Seeds.—When procurable, seeds should be preferred to living plants or cuttings. In a few instances, for example Orchids and tuberous-rooted plants such as the tuberous aroids and many of the ginger family, Zingiberaceae, seeds are either of little value or too slow in giving a result; in such cases tubers or plants are preferred. On the other hand, Palms, Pandanads, Bamboos and many economic plants can be best introduced and established by means of seeds. The seeds should be ripe, and should be carefully dried before being packed. If it is not convenient to despatch the seeds at once they should be kept dry and at a regular temperature. The facilities afforded by the post, however, make the despatch of small packages easy. Canvas bags should be used in preference to paper packets. Collectors now find it convenient to provide themselves with a stock of these in various sizes. If possible, wood tallies, with the names or numbers of the seeds, should be enclosed in the bags, as paper labels are liable to rot because of moisture from the seeds. The paper packet and wooden box were employed by Mr. E. H. Wilson when collecting seeds in China for Messrs. J. Veitch and Sons, and his success was remarkable. Hermetically sealed tin boxes and glass bottles should not be used, the seeds keeping fresh longest when they are so packed as to be able to part with moisture in reason. Experience has shown that all kinds of seeds, even of the commonest vegetables, may be sent successfully to the most distant tropical countries by enclosing them in ordinary paper or canvas bags, and these in a wood packing-case. It is advisable to sow the seeds as soon as possible after their arrival, although where the conditions are favourable they may be kept a month or more before sowing. Small packets may be sent by sample post; packages sent by post are almost always a success. Large quantities should be packed in a watertight box and labelled "Seeds, perishable, to be kept cool and dry." Oily seeds, such as those of the rubber-yielding plants Landolphia, Manihot, Hevea, most of the Magnoliaceae and many of the Palms and Leguminosae, and those which soon lose their vitality when kept dry, such as acorns, should be packed in moist, but not wet soil, or a mixture of soil and charcoal, in wooden boxes. Such seeds may often be successfully transported in the soil of Wardian cases.

2. Bulbs, Rhizomes and Tubers.—These should be gathered at the end of the growing season and kept dry for a few days until the foliage has withered. They may then be packed in a wooden box in wood shavings, paper, or any dry and light material. Straw and hay, however, are apt to become mouldy and should not be used for this purpose. The rhizomes, bulbs or tubers should be packed in the box in such a manner that they cannot move about, as they are very liable to perish if bruised during transit. When the rhizomes are small or thin, they travel best if packed in slightly moistened light material, such as Coconut fibre, peat soil, sawdust, or wood shavings.

Rhizomes or seeds of aquatic plants, filmy Ferns, and Ferns generally, other than tree Ferns, travel best if packed in boxes in moist Moss. In sending large Ferns the fronds should be removed before despatch.

Cuttings.—Cuttings of some plants (such as Pelargonium) may be successfully sent for fairly long distances if tightly wrapped in oiled silk, without external moisture, and packed in tin cylinders or wood boxes.

Ripened growth of many succulent plants, such as Cacti, Euphorbias, Senecios, Stapelias, etc., may be safely collected and sent home in this way. The cuttings should be taken off where there is a constriction or articulation of the stem, and laid out in the sun for a short time to free them from extraneous moisture; they should then be tightly packed in a stout box in dry paper, or some other elastic substance, to keep them from bruising one another. Wood shavings, if thoroughly dried, are an excellent material for this purpose.

3. Tree Ferns, Cycads and Succulent Plants.—Tree Ferns should be dug up in the resting season with a small ball of earth sufficient to keep a few roots alive; the fronds may be cut away or bent down and tied to the stems. They should then be packed in boxes in sawdust or Coconut fibre. Cycads may be treated in the same way, except that they may be sent in boxes without packing of any kind. Succulent plants, such as Agaves, Aloes and Cacti will travel safely if packed in a ventilated box in dry shavings, and directed to be stowed in a cool, dry place on board ship.

4. Orchids.—Those kinds which have fleshy pseudo-bulbs, such as Dendrobium, Epidendrum, Cattleya, Catasetum and Odontoglossum, should be collected at the end of the growing season, dried a little by exposure, and then packed in light boxes in dry wood shavings. Wide, shallow boxes are preferable to deep boxes; the latter, if used at all, should have battens placed across to support the upper layer of plants and prevent the others being crushed. A few holes should be bored into the sides of the boxes for ventilation. They may be sent by steamer and labelled "For cool, dry place in hold." Phalaenopsis, Vanda, Cypripedium, and all such Orchids which have no fleshy stem or pseudo-bulb, should be packed in close boxes or Wardian cases with damp Moss or soil. If possible, they should have attention during the voyage. Tuberous Orchids may be sent as advised for tubers.

5. Wardian Cases.—This method is an expensive one, and should therefore only be used for plants which cannot be sent by any other means. Where convenient, the plants should be established in pots before being packed in the cases; if this cannot be done, the plants should be placed in soil in the cases several weeks, if possible, before despatch. Plants dug out of the ground and immediately sent on a long voyage have a poor chance of surviving. In packing, the soil should be rammed firmly about the pots or roots of the plants, and they should be kept in position by fastening strips of batten transversely between the rows. This is important as a guard against accident in case of overturning or rocking. The plants should be moderately moist at the roots when packed, but no water should be given immediately before the cases are screwed up. Many plants are killed by the excessive moisture inside the case which results from saturating the soil at the time of packing. Slender and weak plants should be supported by upright stakes. Each plant should have a label bearing its name or number, and this should be securely fastened to the stem or stake of the plant itself. The glass of the case should be protected by stout laths or strong wire netting. When first invented the success of the Wardian case as a means of carrying plants long distances was supposed to depend on its being kept absolutely air-tight. It is found, however, that the plants travel better when a small hole about 1½ inch in diameter is bored in each end of the case near the top. Wardian cases should always be conspicuously labelled, "For deck; under awning."

The condition on arrival of the contents of two Wardian cases recently sent from Kew to Uganda may be cited. The cases were despatched from Kew on June 11 and reached Kampala, Uganda, on July 22, when the photograph was taken. Thirty-seven plants had been packed in each case, and of these only six were dead in one case and seven in the other.

A small portable Wardian case, constructed for use in the tropics, is extremely valuable. The case is made of ¾-inch hard deal, well painted, and measures inside 23 inches long by 17 inches wide, and is 26 inches high. It is so constructed that it can be taken to pieces and packed in an easily portable parcel, and can readily be put together by means of a few screws. The weight of the case when empty is 22 lb.

To admit light, talc in small sheets has been used instead of glass, both for the sake of lightness and to obviate the danger of breakage in travelling. Talc, however, is expensive, and in its place sheets of acetate of cellulose (sold as "cellon") could be used for the roof of the case. This material is quite transparent, tough and non-inflammable.

6. Boxes.—Many plants with woody stems, which are capable of supporting drought for some weeks, may be packed in boxes, fixed at the ends or along the sides by means of battens so that the tops all point towards the middle of the box and are free. The roots should first be tightly enclosed in a layer of Moss, wood shavings, or fibrous material, such as Banana leaves, and the plants can then be arranged so that they will not move. A few small holes in the sides or lid of the box will provide ventilation. Such plants as Roses, Rhododendrons, Pelargoniums, Begonias and Orchids have been sent successfully from Kew to distant countries, even to Australia and New Zealand.

Cases or boxes containing living plants from the East Indies, Australia, etc., which are sent via the Suez Canal should be despatched so as to arrive in England in September, October, April, or May. The heat of the Red Sea has often proved fatal to plants passing through it during the summer (June, July, August).

Cases and boxes from America, the West Indies, etc., may be sent so as to arrive at Kew any time from the beginning of May to the end of October.

No cases containing living plants from the tropics should arrive in England in the winter months—viz., from November to April.

---

* *Kew Bulletin*, No. 3 1914.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Propagating Cool Orchids.—It frequently happens that it is desirable to propagate Odontoglossums, Odontiodas, and Oncidiodas, and similar plants, and it is convenient if the division of the plant is commenced some weeks before re-potting. The back pseudo-bulbs that have shed their leaves are kept plump by the more active portions of the plant, therefore it is desirable that the back bulbs should be removed, even were it not necessary to increase the stock. If these bulbs are severed by cutting the intervening rhizome some little time before the bulbs are re-potted, and the plants are allowed to remain in the old compost, it will be found that in many cases the severing of the rhizome has induced the dormant eyes at the base of the pseudo-bulb to commence growth, which is just what is required. Any plants that have not been divided and require re-potting at the present season should have the rhizome severed in the manner indicated, and the old bulbs should be potted up separately into pots only just large enough to contain them. Masdevallias may be divided at the time of re-potting by pulling the masses carefully apart and either re-potting them together in the same pot or separately as divided.

Disa grandiflora.—This attractive Cape species will now be flowering freely. Care must be taken to guard the flowers from thrips and green fly. Spray the plants carefully overhead once or twice, taking care not to wet the flowers after they are expanded. Disas may be re-potted immediately they have passed out of bloom, but re-potting should never be done except in cases where it is necessary to provide increased root room. Larger pots may be used for Disas than for most Orchids. The compost should be of a lasting nature, and should be made moderately firm, and the pots two-thirds full with drainage. Let liberal amounts of broken charcoal and sand be mixed with the potting compost. After they are potted the plants should be placed in a well ventilated position exposed to the sun light. Where Cape Heaths are cultivated the shadier side of the Heath house will suit them well. The pots may be placed on a bed of ashes or plunged to about half their depth in Sphagnum-moss in order to assist in producing the humid condition the plants enjoy.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

The Taller Herbaceous Plants.—If a succession of Sunflowers is required, including the tall-growing variety Miss Mellish, or any of the plants are required to flower later than they would bloom naturally, the top buds may be pinched, and this will force the buds lower down the stem to produce flowers for later dates. The old double-flowered Helianthus multiflorus is very bright in the wild garden when it is planted in groups, which last a considerable time in flower. That beautiful plant Helenium striatum grandiflorum may be treated similarly to the Helianthus. Anemone japonica and its allied varieties are now in flower, as are Artemisia lactiflora, Aconitum japonicum, Solidago altissima, and S. canadensis.

Fuchsia.—The Fuchsias are now flowering in perfection, and they are most effective when they are grown as standards. For use as pot plants the varieties Charming, Madame Corneillison and Rose of Castile, although old, are still amongst the best single varieties, but it is necessary to remove the seed-pods if continuous flowering is looked for. The plants will be further assisted by giving the roots applications of liquid manure and soot water. If healthy cuttings are selected now and rooted, and grown in suitable conditions, they will make grand specimens for next summer. In order to get them into standard plants with 3 or 4 foot stems the side shoots must be pinched out. The plants must be kept gently growing all the winter in a warm, light house, or for preference a humid pit, keeping them near to the glass and syringing them occasionally with clear water. Hedges formed of hardy Fuchsias, such as Riccartonii, are exceedingly effective in shady places near the seaside, and, as many readers will remember, they are amongst the most striking sights at Killarney; but this variety of coccinea is also worth growing in a few clumps in the fronts of shrubberies. In the event of severe frosts cutting it down to the ground in winter, the stool will shoot up again in spring and make fine flowering plants by autumn.

Climbing Roses.—As the climbing Roses pass out of flower, most of the growths which have bloomed should be cut out, training in at the same time all the best of the strong shoots produced during the present season. Next year's flowers will depend upon getting the buds in the axils of these growths thoroughly developed whilst there is still sunshine. Mildew is prevalent, and flowers of sulphur should be dusted on any shoots where this disease is noticed.

Bedding Roses.—Look over the Rose beds, remove any decayed flowers, and cut away have bloomed should be cut out, training in at that the strong shoots of the present season will have better room to develop. If mildew is present dust the flowers with sulphur. Applications of manure, whether in the form of manure water, soot water or chemicals, may be applied to Roses at the present time, provided the applications are not unduly strong. At no other season of the year are the plants better equipped for assimilating extra food supplies than the present, when there is an abundance of roots in an active condition.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Vines.—Muscat Grapes nearing the ripening stage must not be treated to an excess of fire heat, or the Grapes will fail to keep well, and the skins will show shrivelling. At the same time sufficient heat must be employed to prevent any decay of the berries in damp and dull weather, and a free circulation of air should be maintained, so that the Grapes may keep in perfect condition on the vines for several weeks to come. All inside waterings that are now necessary should be carried out early in the day. Take every means to prevent injury of the ripening berries by wasps, which are very numerous in some gardens.

Peaches and Nectarines.—Most of the young wood on the early trees has almost completed its growth, therefore artificial waterings should be much less frequent than formerly. At the same time the soil must not be allowed to become dry, especially whilst the leaves continue to adhere firmly to the trees. Syringe the trees vigorously in sunny weather to check insect pests, and so keep the leaves healthy as long as possible. If any of the younger trees still appear to be making undesirable growth an attempt may be made to check this tendency by keeping the soil just on the dry side, and if the roots extend to the border out-of-doors sheets of galvanised iron or some other convenient protection should be used to shelter the borders from excessive rains. All the extra strong shoots on such trees should be stopped. In mid-season houses most of the trees have now been cleared of their crops, but much of the wood is still unripened, therefore let the house be kept fairly warm during the day and the top and side ventilators should open to their fullest extent during the night. All syringing should be done sufficiently early in the day to allow the moisture to evaporate before nightfall. Trees that have borne heavy crops of fruit should be treated with manure water or an artificial fertiliser, after first forking the surface soil over very lightly so that the water will easily find its way to the roots of the trees. In later houses where mildew sometimes shows itself at this time of the year the atmosphere should be kept somewhat drier, and the hot water apparatus may be brushed over with a mixture of water, soft soap and flowers of sulphur. Expose the fruits as much as possible to the rays of the sun by pushing aside—not removing—the foliage nearest to them, and if it is thought necessary, use a little fire heat during the daytime, but do not neglect to give plenty of ventilation at the same time. No artificial heat should be employed at night unless the weather is unusually damp or cold, in which case a little air should be admitted through all the ventilators, and the water pipes should be only comfortably warm.

Strawberries.—Plants that have been recently shifted into their fruiting pots and are intended for early forcing should be so placed that each plant will be well exposed to the sunshine and air. Remove all runners and side shoots as they make their appearance. Keep a careful watch upon each batch of plants and directly the pots become well filled with roots apply a suitable stimulant; a daily syringing of the plants with clear soot water in fine weather will be beneficial. Unless the plants are standing on a hard base the pots should occasionally be lifted or turned to prevent the roots penetrating the ashes or soil.

Tomatos.—Tomato plants intended for fruiting in winter should be ready for transferring into their fruiting pots. The pots must be provided with ample drainage, and a compost that is not too rich must be used for the root medium, otherwise the plants will make unsuitable growth. For the present artificial heat is unnecessary, if not injurious, but presently when the nights become cold and damp a little artificial heat and liberal ventilation will be necessary so that the atmospheric temperature at night may be kept to 60°. If the plants show any signs of fly they must be fumigated at once, or the pest may get such a hold that the plants will be unable to grow satisfactorily.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Perpetual-fruiting Strawberries.—The chief advantage to be gained by cultivating perpetual-fruiting Strawberries lies in the fact that they are capable of producing fruit in autumn, when occasional dishes of Strawberries are very agreeable additions to the dessert. With this end in view the beds should be kept scrupulously clean throughout the season by frequent hoeings; any flowers that appear on the plants before the middle of July should be picked off and liberal mulchings should be given the roots during hot weather, with waterings in the event of drought. If these details of cultivation have been given attention this season the plants should be now healthy and vigorous, and a good autumn crop of fruit should result. During showery weather the plants may still be given a dressing of artificial manure, selecting one especially prepared for fruiting plants. Scatter a little fresh soot and lime around each plant in order to keep away slugs and other pests, which would otherwise be liable to damage the fruits, and lay down some clean straw or litter between the rows so that the fruits shall not be splashed during rains. Later when the fruits are ripening there may be considerable moisture present owing to continued damp weather, or heavy dews, in which case fruits allowed to remain in contact with the damp straw may decay before they are sufficiently ripe to be gathered. Therefore it is recommended that the trusses of fruit should be lifted from the ground and supported on short, forked sticks, or on wire Strawberry supports obtainable from the sundriesmen. Whilst handling the trusses during the process of supporting them on the sticks occasion may be taken to thin the fruits, allowing eight to twelve fruits to each plant, provided it is healthy and vigorous. Should the weather prove unusually damp and cold the fruits may be induced to ripen more quickly if spare lights from the frames are placed over them, or the Continuous Cloches, often advertised in these pages, may be used to advantage, or, failing these, the old-fashioned hand light. In either case a constant circulation of air must be provided for by elevating the lights on bricks or flower oots. The variety St. Joseph is still largely grown, but the newer variety St. Antoine de Padoue has larger fruits of better flavour. Laxton's Perpetual and La Perle are still newer varieties that at present are not widely known.

Loganberries.—If the old fruiting growths of Loganberries have not yet been cut out, this work should be given attention at once, and only sufficient new canes should be retained to furnish the available space thinly. When this has been done let a dressing of well-rotted manure be forked into the surface soil.

Wasps.—One thousand queen wasps were killed in these gardens in the past spring, and still the pest is giving us much trouble. Every effort must be made to locate nests in order that they may be destroyed. Cyanide of potassium dissolved in water and used with cotton wool for putting in the mouth of the hole is an old and effectual remedy if applied with care after dusk when all the wasps are at home. The cyanide being deadly poisonous it must only be placed in the hands of a responsible person, who must keep it locked up. Tar water, a refuse from gasworks, will also destroy wasps effectually, and is to be recommended in preference to gas tar. The rule of paying the staff for queen wasps and for taking wasps' nests has much to recommend it, and if the rule were observed in all gardens we should probably see a diminution in this exceedingly troublesome pest.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Begonia.—The house containing Begonia Gloire de Lorraine should be kept moist by frequent sprayings with clear water and damping between the pots, it being important that the plants should grow continuously without suffering a check. Weak soot water is good for using occasionally instead of clear water for watering the roots, and a little soot may also be dusted over the bed or staging on which the plants stand. This Begonia is also effective when cultivated in baskets made of cork bark. Continue to pinch off the flower-buds that appear until the end of October, and even longer in the case of those plants which are intended for blooming late. Pot plants will need to have the leading stems supported with green, Bamboo tips to which the side-shoots may be slung. Begonia Gloire de Sceaux is a bold, handsome plant, with magnificent foliage, and it forms an excellent succession to Gloire de Lorraine. Then there are the hybrids obtained from B. socotrana, which are amongst the best for winter blooming; these plants need light fumigations at intervals until they commence to flower.

Salvia splendens.—Plants of Salvia splendens should be allowed to remain out-of-doors so long as the weather remains favourable and the bracts are not showing colour. When colour development is noticed they must be removed indoors or protected with glass lights; in the former case it will be necessary to admit all the light and air possible both by day and night, with the object of retarding the flowering season. Allow ample space between the plants, and if green or white fly is noticed fumigate the house immediately. If Salvias have been raised from seed they will form a succession to the plants raised from cuttings which, as a rule, come into flower earlier in the season.

Gloxinia and Achimenes.—The flowering stage of both Gloxinia and Achimenes is nearly past, but the plants will need attention, for it is important to get the tubers and corms to ripen. Let the plants be placed in a warm frame fully exposed to sunshine and afford them water somewhat sparingly until the foliage dies away, when the pots should be placed under the staging in a house where the temperature will not fall below 53° and where the pots will keep moderately dry.

Plumbago rosea and P. coccinea.—These plants may now be allowed to develop their flower-spikes, and the roots may be given some weak liquid manure and diluted soot water occasionally. Syringe the plants daily and shade them during hot sunshine, keeping the atmospheric temperature at about 70° to 75° until the flowers begin to show colour, when the temperature may be lessened by 5° or even 10°.

Browallia speciosa.—This plant is a most useful one for winter flowering, its pretty blue flowers having a fine effect in the greenhouse. Plants which until now have been cultivated in cold frames may be moved to a cool greenhouse, and the roots should be given frequent applications of liquid manure and soot water. If signs of green fly appear dip the plants in quassia extract.

Early Annuals for Spring.—There are certain annuals which if sown now will come into flower in the early spring, such as Clarkia elegans, Dimorphotheca aurantiaca, Stocks Princess Alice, Sutton's Christmas Pink and Riviera Market. Sow the seeds in boxes, transplant two or three seedlings into each 5-inch pot, and grow the plants in a warm greenhouse, preserving them from all checks to growth.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Onions.—The ground for winter Onions should be dug deeply, and enriched with plenty of well-rotted manure. The early crop of Onions grown from transplanted bulbs has matured sooner than usual, and is ready for lifting. Let the bulbs be well ripened before they are stored. There is a great risk in allowing Onions to remain for a day longer in the ground than is necessary after growth is finished, for if rain falls they may start into growth afresh, thereby impairing the keeping qualities. Moreover, the bulbs may split, if their lifting is deferred unduly long. The old-fashioned method of tying the bulbs on sticks and hanging them in a cool, airy shed is very suitable for keeping Onions in the winter. If stored loose, they should be placed in a single layer, the larger and less ripened bulbs to be used first. Frost is not harmful to Onions, but damp is, and the store should be well ventilated in all kinds of weather. Provided the bulbs are perfectly matured and well ripened they should keep sound under either method. Plants raised in March will continue growing for some time to come, but the development of the bulbs may be hastened by bending the leaves to the ground just above the neck of the plant.

Cauliflowers. Make a sowing of Cauliflowers in order to raise plants that will stand over the winter, and prick them out under the shelter of a wall as soon as they are large enough. In March next transplant them into their permanent quarters. The old variety Early London is esteemed by many for this purpose, but Early Dwarf Erfurt is perhaps more reliable. Let there be no attempt to obtain a forced growth with this batch, as a sturdy, firm habit is necessary for the plants to withstand winter weather. If Cauliflower seeds were sown at the same time as the Cabbages for spring use the plants should be ready, or nearly ready, for transplantation into a warm border. If a dwarf variety was selected the plants need not be put at more than 18 inches apart, and in the event of the weather in winter being about the average the plants should produce nice heads for use in May next.

Lettuces.—Continue to transplant seedlings of Lettuce as they become large enough, and later they will need to be again transplanted into frames for the winter. A batch of Lettuce should also be planted on a west or north border, selecting a dwarf Cabbage variety, in the expectation that the plants will come into use in April and May next. For frame culture Hicks' Hardy Cos is one of the most satisfactory varieties, and another sowing may still be made of this, in company with a Cabbage variety of the Tom Thumb type. If the ground is digged specially for this crop, and the surface made perfectly smooth, so much the better.

French Beans.—If the crops now in a forward condition in frames are growing too strongly, causing the plants to press on each other, the growth should be pruned slightly in order to relieve the crowding. Not infrequently a sharp frost occurs about this date unexpectedly and destroys the outdoor crops of French Beans, therefore it is desirable to have protective material ready for placing over the frames at night. Watering must be carried out with care, and if the border remains moist enough without any watering being done so much the better, otherwise it must be applied early in the day, and it must be run carefully on to the surface of the soil without wetting the plant. Where Beans are required during winter preparations for pot culture must shortly begin, but such early forcing should not be attempted unless the gardener possesses suitable means for carrying it out successfully. Osborne's Forcing is still one of the best varieties for the purpose, and sound loam provides a good rooting medium.

Turnips.—Turnips sown after this date will not be of much value unless for producing leaves for consumption in spring. The last batch that was raised is now ready to thin, and as the plants will only produce bulbs of moderate size at this season, these will be left standing 4 inches apart for such varieties as Snowball and White Model, but 6 inches will be sufficient for stronger varieties. Thoroughly stir the surface soil with the hoe—with the draw hoe, it being less likely that the bulbs will receive injury from the draw hoe than would be the case if the Dutch hoe were used.

Autumn Broccoli.—This crop is abnormally early, and we have it turning in simultaneously with early Cauliflower sown at the same date and in advance of late Cauliflowers, due, no doubt, to the protracted drought and intense heat in July-August. One way of keeping both vegetables is to loosen the roots of the plants, and another to take up the plants with roots and soil and hang them upside down in a perfectly cold and dry place. The cut heads can be preserved for a long time in an ice-house, where this forms part of the economic furnishing of an estate. It is clear that in cases where these crops have turned in as they have here, some such means must be taken to prevent the supply being interrupted.

Mustard and Cress.—Supplies for the future must be met by sowing and growing in heat. A compost of half soil half decayed manure an inch thick suits. The seeds to be thickly spread over the surface, then soaked with water and covered with brown paper or a board. Renew the compost for each sowing.

Cabbages.—Planting will now be general, and should not be delayed longer than is unavoidable. Cabbages are just as susceptible to injury from neglect as any other plant, and for so important a crop no risks ought to be taken. We had to draw the roots of the more forward of our plants through a mixture of soil and water, the land being so very dry at the time, but rain has since fallen abundantly, and now that precaution may not be needed. A deep drill should be drawn, so that the plants may be got as deep into the ground as possible, without unduly burying them. At this season it is not essential to firm the plants so much as in spring.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Cabbage.—Ground allotted to spring Cabbages will be put in readiness within the next fortnight. A good manure for this crop is well-decayed refuse from the garden, which should be forked over and sprinkled with lime. Where there is a scarcity of winter greens the best Cabbage plants should be set at 6 inches apart in a sheltered bed at once. If the winter is not too cold the plants will furnish good heads early in the New Year.

Melons.—The number of fruits is dwindling fast, and the main batch is practically over. The favourable weather of August has resulted in an excellent crop from the last batch set early in June. These plants should be kept in good condition by attending to such details as pruning and watering. They must be covered with lights as the nights get damper, but ventilation must still be afforded freely, both day and night.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, SEPTEMBER 8—

Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Lawns and Their Upkeep").

THURSDAY, SEPTEMBER 10—

Vegetable show at Manchester (Messrs. Dickson & Robinson) (2 days).

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 58.6.

Actual Temperatures:—

London, *Wednesday*, September 2: Max., 74°; Min., 65°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, September 3 (10 a.m.); Bar. 29.3; Temp. 65°. Weather—Misty to fine.

Provinces, *Wednesday*, September 2: Max., 74° Brighton; Min., 53° Eastbourne.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—

Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—

Dutch Bulbs and Lilies, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.

TUESDAY—

Annual Sale of Winter-Blooming Heaths, &c., at Burnt Ash Road Nurseries, Lee, S.E., by order of Messrs. B. Maller and Sons, by Protheroe and Morris, at 11.

WEDNESDAY—

Twenty-ninth Annual Sale of Pot Plants at the Nurseries, Chingford, Essex, by order of Messrs. H. B. May and Sons, Ltd., by Protheroe and Morris, at 11.

Dutch Bulbs in cases as received, Palms, Plants, and other horticultural produce, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 3.

THURSDAY—

Thirty-third Annual Trade Sale of Winter-flowering Heaths and Ferns at Longlands Nursery, Sidcup, Kent, by order of Messrs. H. Evans and Sons, by Protheroe and Morris, at 11.15.

A Timely Appeal.

The following appeal, signed by the president, Field-Marshal Lord Grenfell, the treasurer, Mr. Gurney Fowler, and the secretary, the Rev. W. Wilks, has been addressed to the Fellows of the Royal Horticultural Society:—

"The President and Council of the Royal Horticultural Society feel very keenly that in troublous times such as we are at present passing through (and which, although we by no means expect it, may possibly become even more acute), counsels of perfection cannot always be carried into effect. At the same time it is none the less the duty of those who are placed in a responsible position and who can exercise any influence in the country to give the best advice in their power, leaving it to the conscience and judgment of individuals to act upon it so far as they are able and see fit. It is already evident that not only actual gardeners, but all who in any way depend for a living on horticulture and horticultural produce will be certain to suffer seriously from the indirect effects of the war.

"We desire therefore to point out to all the Fellows of the society:

"First, that garden produce may in the winter and early spring become of inestimable value to themselves and to their poorer neighbours who have little, if any, garden of their own.

"Second, that, dismissing gardeners, cancelling orders, and refraining from planting, and such like, must inevitably result in creating a vast amount of additional unemployment and distress.

"Whilst rightly denying oneself all unnecessary luxuries, it is, in our opinion, an act of the highest patriotism to live our normal lives as far as possible, cultivating the same area of land, employing the same staff, transacting, in fact, all our usual business and household arrangements. To act otherwise will of necessity throw numbers of men and women out of useful and remunerative work who, having speedily exhausted their own very slender resources, must eventually become dependent upon the poor rate or on the almost equally undesirable provision of indiscriminate almsgiving.

"With all earnestness and with all the influence we possess we would therefore urge every Fellow of the Society to give careful thought to this advice, which we feel it our duty to tender, and to adopt it and act on it so far as it is in any way possible for each one in his own individual case."

Heredity.

Professor Bateson's inaugural address, which dealt with the subject of heredity, was divided into two parts; the first was delivered at Melbourne, and the second at Sydney. In the course of the address Professor Bateson reviewed the advances in knowledge which have been made by means of the Mendelian method of analysis. He pointed out that the starting-point of modern investigations is provided by the conception that an organism is formed by "pieces of living material" derived from the parent organisms. The characters of the individual are thus determined by those of the germ cells by the fusion of which the individual is produced. Owing to this dual nature of the organism, and to the fact that the germ cells produced by an individual are not necessarily all alike, organisms exhibit variation. To Darwin is due the first full perception of the significance of variation and the recognition of the widespread occurrence of variation among living beings.

The problem of the modern student of heredity may be stated thus:—If a population consists of members which are not alike, but differentiated, how will their characteristics be distributed among their offspring? The embryologist hoped by means of the microscope to lay bare to the eye the process whereby the offspring is formed from the body of the parent. Although he has revealed much, the actual mystery of the making of the individual has been left undiscovered.

The problem, having resisted this mode of attack, had to be approached by another route, and the purpose of the Mendelian is to discover how differences—or, as might be said, variations—between two kinds of thing, Sweet Peas or fowls, for example, are distributed among the offspring. The discovery that the several differences between races of a given animal or plant are distributed to the offspring independently of one another destroys once for all the old conception of heredity. It shows that "purity of blood" by no means signifies what may be called "all round" purity, that an organism, though pure bred for one or several or many characters, is not pure-bred for others: the fact that it is pure bred for one character is no guarantee that it is so for others.

Much work remains to be done along Mendelian and similar lines before we shall be in a position to throw light on the great problem of the origin of species: the Darwinian hypothesis of natural selection cannot be regarded as substantiated, and although the survival of the fittest expresses no doubt a general truth applicable to the average individual, it can hardly be invoked to explain the survival of the factors of germ cells, on which factors the characteristics of the individual depend. Yet it was in application to the parts—to the details of specific difference, to the spots on the peacock's tail, to the colouring of an Orchid flower, that the potency of natural selection was urged with strongest emphasis. Shorn of these pretensions the doctrine of the survival of favoured races is a truism helping scarcely at all to account for the diversity of species.

Recognising the extreme limitation of our knowledge of biological processes, the present-day biologist is shy of generalities. It is no time to discuss the origin of Dicotyledons while we are not sure how it came to pass that Primula obconica has produced its abundant new forms almost under our eyes.

The modern study of heredity has compelled naturalists to reverse their ideas of variation. Much that passes under this name is nothing but the result of new combinations of factors, and although there is evidence that factors may be lost and hence that characters may disappear, the evidence of the origination of new factors is at present but scanty.

In the case of cultivated plants it is well known that most of the new varieties are the outcome of deliberate crossing. We have pretty full histories of these crosses in Gladiolus, Orchids, Cineraria, Begonia, Calceolaria, Pelargonium, etc. In a few cases, on the other hand, varieties have a single origin—for instance, those of Sweet Peas. Others for which a single origin is claimed, e.g., Chinese Primula, Dahlia, Tobacco, etc., came to us in an already domesticated state and their origin remains obscure.

If the origin of a form under domestication is hard to imagine, it becomes no easier to conceive of such enormous deviations from type coming to pass in a wild state. Examine any two distinct species which meet each other in their distribution, as do Lychnis diurna and L. vespertina. In overlapping areas are many intermediate forms. These used to be taken for transitional steps, and the specific distinctness of L. vespertina and L. diurna was on that account questioned. Once it is known that these supposed intergrades are merely mongrels between the two species the transition from one to the other is practically beyond our powers of imagination to conceive. If both species can survive, why has the common parent perished? Why, when they cross, do they not reconstruct it, instead of producing practically sterile hybrids? As the evidence stands at present all that can be safely added in amplification of the evolutionary creed may be summed up in the statement that variation occurs as a definite event often producing a sensibly discontinuous result; that the succession of varieties comes to pass by the elevation and establishment of sporadic groups of individuals owing their origin to such isolated events, and that the change which we see as a nascent variation is often, perhaps always, one of loss.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Euphorbia (Poinsettia) pulcherrima rosea.

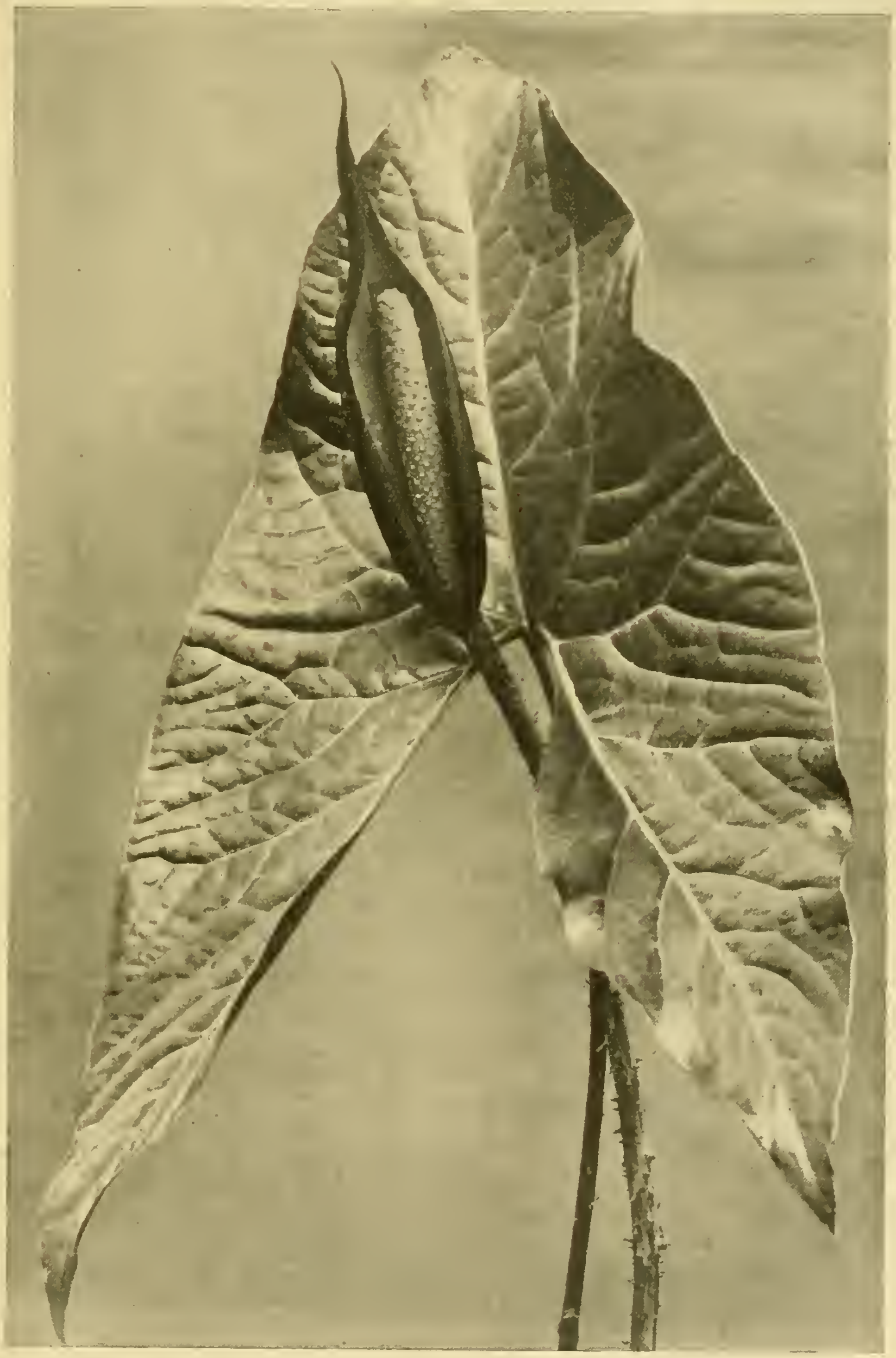
War Items.—Messrs. W. and J. Brown state that in Stamford a sale of Roses was conducted in the streets on the 15th ult. for the purpose of raising money in aid of the Prince of Wales's Fund. So many as 10,000 Roses were sold, and a sum of £80 was realised.

—— At the Horticultural College, Swanley, special short courses of instruction in gardening, dairy work, and poultry-keeping have been arranged for those women who wish to obtain knowledge in these subjects, and to help in the production of food at the present crisis.

—— In last week's issue of this journal there is an announcement that the autumn exhibition of the National Rose Society has been abandoned. As a member of the council of the National Rose Society, I read this statement with amazement. So far as I am concerned, no intimation has reached me that the society intended to take this step, and I think this is a matter which should rest with the council. I hesitate to think that Mr. Chas. E. Shea, the president of the society, has taken steps to abandon the show without consulting the council, and I refuse to accept your report as authoritative until further light is thrown upon this matter [The information was official.—Eds.] I have already been in consultation with several of my colleagues, and the feeling is that the show should go on. While on this subject, I venture to deplore the wholesale cancellation of the great British flower shows. In my opinion, the men responsible for our leading societies have shown a poor public spirit, and the request from the Government, "Business as usual," has not been complied with. There is some excuse for Shrewsbury and for the Royal Horticultural Society, but none for the others. Only last week you published a spirited appeal from the president and secretary of the Horticultural Trades' Association of Great Britain and Ireland, and in the face of this what must the men who control our great societies think of themselves? I am ashamed of the panic from which some horticulturists seem to suffer in these days. *George M. Taylor, Mid-Lothian.*

[The sole reason for the abandonment of the R.H.S. Shows was that the Hall was requisitioned by the War Office.—Eds.]

—— Messrs. Sutton & Sons have issued the following appeal on behalf of the Prince of Wales' Fund to members of the staff of the Royal Seed Establishment, Reading, and it has been warmly supported by all their employees :—" The Mayor of Reading's Committee is organising collections in houses of business in the town where full work and wages are still continued. H.R.H. the Prince of Wales says, in his letter inaugurating the fund :—'The present time of deep anxiety will be followed by one of considerable distress among the people of this country least able to bear it. . . . At such a moment we all stand together.' In Reading there is already considerable distress, and we feel confident that the staff of the Royal Seed Establishment while they are receiving full pay themselves will be glad to make some weekly contribution to His Royal Highness's Fund which will be used for the relief of those whose earnings have either failed altogether or are now so reduced as to be totally inadequate for the support of their wives and children. Mr. Westbrook and the representatives of our branch of the Workpeople's Hospital Association have kindly undertaken to collect, and we trust that all our employees will give the subject their careful consideration and endeavour to spare some weekly contribution, however small. We, as partners, shall be very pleased to contribute to their fund



Photograph by C. P. Raffill.

Fig. 70.—CYRTOSPERMA JOHNSTONII.
(See note on *Botanical Magazine*, p. 179).

an amount equal to the total collected each week from the staff." The loyalty of the whole Royal Seed Establishment is shown by the fact that a large proportion of those of eligible age have enlisted in His Majesty's forces; one of the best stores of the firm has been offered as a Red Cross hospital, the Recreation Club's rooms and the Abbey Hall have been placed at the disposal of soldiers passing through the town; and now, as is shown by the response to the foregoing notice, employers and employed are contributing to the support of His Royal Highness's Fund for the relief of those less fortunate than themselves.

—— The Military Authorities are purchasing large quantities of farm and market garden produce for the use of H.M. troops throughout the country. For the purpose of facilitating supply and of preventing, as far as possible, a scarcity of produce arising in one district while there is a surplus in another, farmers are urged to assist the War Office by stating the quantity of produce they have to sell at fair market price. Forms for the purpose can be obtained either from any Post Office or direct from the Board of Agriculture and Fisheries, 3, St. James's Square, London, S.W.

Confidential.

To the Board of Agriculture and Fisheries.

I am prepared to sell to the War Office, at fair market value, and delivered on rail at ______ the following quantities of produce now on my farm at ______ in the parish of ______ in the County of ______.

State Quantity.

Tons.	Cwts.	
		Old Meadow Hay.
		New Meadow Hay.
		Old Clover Hay.
		New Clover Hay.
		Wheat Straw.
		Potatos.
		Cabbages.
		Carrots.
		Onions.
		Other Vegetables.
Quarters.		
		Old Beans.
		New Beans.

Signed

Postal Address

Date *County*

This form when filled up should be forwarded to

The Secretary,
Board of Agriculture and Fisheries,
3, St. James's Square,
London, S.W.

The envelope need not be stamped.

—— Messrs. Sander and Sons inform us that out of 27 men employed in their Orchid houses before the war, there are 12 who have joined the Army, including three Belgians, who went back to their country. Those left are nearly all married or elderly.

—— A committee of gardeners formed in Bath, under the chairmanship of Mr. C. Curd, is engaged in the distribution of plants and seeds to those who require them, and already thousands of suitable plants have been distributed in the district. Messrs. Cooling & Sons have presented the committee with 250 collections of seeds. Offers of land for cultivation for the benefit of the poor have been received, and it is proposed that a band of voluntary workers should be formed to prepare and plant them. This proposal is in abeyance for the time being, it being thought that much unemployment is bound to arise, and gardening will be a useful direction in which to divert a large number of those out of work.

—— In the number of vegetables now being commended to the attention of owners of gardens I have seen no mention of Peas to be produced, not for the fruit, but for the shoots, which are acknowledged to be a rather nice vegetable for spring. Any cheap variety will do for this purpose, and the crop can be sown on trenched ground in October-November in lines wide enough apart to admit a hoe between to keep the surfaces sweet. The circumstance is fairly well known that, while the current year's Peas are very susceptible to frost, young plants are resistant. It is feared that the supply of vegetable seeds for 1915 may be less than the demand, and it may be noted that a very large saving can be effected by sowing less thickly than at present seems to be, and, as we know, is the custom. Though so many pods are not so soon ready when Peas are spaced at 6 to 9 inches apart in a drill, the crop as a whole will be as large, and certainly the plants will continue producing for a very much longer period, than when sown in the usual way. The saving in seed for this one crop treated in this manner would therefore be enormous. Though I space Beans and French Beans closer than one foot, there is no good reason why more seeds should be used, because the extra plants are removed when young. Other crops are sown also enormously too thick. I recently counted young Carrots at half an inch apart, one ounce sowing 1,000 feet run at this distance, and exactly the same waste of seeds occurs with Spinach, Turnips, Lettuces, Onions, and Radishes. *R. P. Brotherston.*

—— "London Gardens" has offered for free distribution gifts of seedling Carrots, Turnips, Radishes, Spinach, Broccoli, salads and Cabbages for autumn and winter cropping (carriage paid) from about the first week in September. Secretaries of London Gardening Societies are invited to make an early application, stating number and size of plots and quantity and kind of seedlings required. Application should be made to the Secretary, London Kitchen Gardens, 32, Victoria Street, Westminster, S.W.

—— In view of the exceptional difficulties of publishing and posting their usual autumn farm catalogue, Messrs. J. Carter and Co. have issued an abridged price list of seeds for present sowing. They welcome the advice given by the experts of the Board of Agriculture and the Royal Horticultural Society to sow all spare land with quick-growing vegetables to prevent any deficiency in green produce, and in a letter to us remark that, "of all businesses, that of the seed merchant is one where the adoption of the rule, 'Business as usual' during the war is of almost vital importance in order to ensure our future harvests."

—— Messrs. Chivers and Sons, Ltd., inform us that forty men in their employment have joined the Colours. Some of these are Army Reservists who were called up immediately upon the outbreak of hostilities, and others enlisted in various corps, Regulars or Territorials, when Lord Kitchener's appeal for more men was issued. Messrs. Chivers are keeping open the situations of all the men who are on the permanent staff, and are looking after the dependents of those who are married.

—— In view of the cancellation of the Dumfries and District Show on account of the war, it has been arranged that an exhibition of flowers and vegetables should be held in St. Mary's Hall, Dumfries, on September 5. The whole proceeds are to be devoted to the relief of distress caused by the war. Mr. J. L. Armstrong, Mountview, Eastfield Road, Dumfries, is the hon. secretary.

—— England becoming involved in this terrible war makes the outlook very bad for imported seeds and bulbs. The crops in Northern France are probably ruined and seedsmen the world over will suffer on account of shortage. As prospects appear to us now the trade should not expect much, if any, seed from Germany unless there is soon a cessation of hostilities. Although Holland and Denmark are rather isolated, it is hardly probable they will be able to ship any of the seed now growing. Fortunately for America, the larger seed houses have for years made a practice of carrying a year's supply of all seed which will retain its vitality, and therefore they should only be obliged to do without some relatively unimportant European varieties. *W. Atlee Burpee, Philadelphia, in "The American Florist."*

—— Even if the war in Europe terminates quickly the supplies in many lines of stocks imported by florists, seedsmen and nurserymen will be materially reduced. Compulsory military service will call from the fields many men engaged in the production of seeds, bulbs and plants. The supplies from France, Germany and Belgium in all probability will be cut off. Shipments from Holland and Scandinavia will depend on the steamships available, but in any event it is certain that deliveries from these countries will be greatly delayed. The present European conditions will demoralise trading and prices there. Some of the German seed items needed for immediate use are Cineraria, Calceolaria, Primula, Pansy and perennials. Extensive shipments of French bulbs have already arrived, others are afloat, but later shipments of these bulbs are quite uncertain. Dutch bulbs will be late and irregular in arrival even if shipped. The principal plants affected are Azaleas, Palms, Araucarias, Rhododendrons, Peonies, Roses, Boxwood and Bay Trees. Ornamental trees, shrubs, and the very important French seedling fruits cannot be moved. Flower seeds of nearly all kinds except Sweet Peas and Asters will be unobtainable, likewise seeds of most kinds of vegetables, such as Cabbage, Cauliflower, Beet, Radish, Spinach, Carrot, Turnip, Rutabaga, Parsley, also Mangel and Sugar Beet. Lily-of-the-Valley pips will be eliminated and Immortelles and various lines of baskets, jardinières, etc., will be in short supply. There is some supply of cold storage Lily-of-the-Valley held at New York and Chicago, and a few importers are still well supplied with Bay Trees and Boxwood. *Extract from "The American Florist."*

—— The *Times* learns from its special correspondent in Venice that a shortage of food is beginning to be anticipated in Vienna. There is always a shortage of meat at this time of year, but owing to the large number of refugees and the needs of the Army the situation will soon become really serious. The inhabitants of the city are ordered to arrange for the making of vegetable gardens in all the parks and gardens of Vienna. The seeds of all winter vegetables are supplied free. Spinach, Turnips, and Beetroots will soon be growing in all the open spaces. If such measures are already considered necessary a famine may be expected later.

—— Gardeners will feel profound sympathy for the Earl of Plymouth, whose second son, the Hon. A. Windsor Clive, Lieutenant in the Coldstream Guards, has died from wounds received at Mons. A brother of deceased died whilst in India on the occasion of the last Durbar, consequently, the heir to the title is the only surviving son. The Earl of Plymouth, whose public-spirited action a short time ago resulted in saving the Crystal Palace for the nation, is President of the British Gardeners' Association, and only recently he sent a cheque for £10 to the secretary of that body, with an accompanying letter explaining that he feared that the British Gardeners' Association and similar societies would suffer on account of the war. The gardens at Hewell Grange, Worcestershire, and St. Fagan's Castle, Glamorganshire, are in the charge of sons of the late Andrew Pettigrew, for many years gardener to the Marquess of Bute at Cardiff Castle, and the excellent maintenance in both cases shows what great interest the Earl and Countess of Plymouth have in horticulture.

"The Botanical Magazine."—The issue for August contains illustrations and descriptions of the following plants :—

Cyrtosperma Johnstonii, tab. 8567 (see fig. 70, p. 177).—This ornamental Aroid was first described by Mr. N. E. Brown in *The Gardeners' Chronicle*, December 23, 1882, page 808. The plant was introduced by the late Mr. W. Bull, of Chelsea, from the Solomon Islands, and was first grown in gardens as Alocasia Johnstonii. The leaves are very handsome ; the green laminae are traversed by reddish veins, and the undersides are dull purple. The plant requires a tropical temperature and plenty of moisture. The specimen illustrated in *The Botanical Magazine* was grown in the Nepenthes house at Kew, flowered in August, 1913, and bore erect spathes about 6 inches long, coloured dark violet outside, and enclosing a spadix, which at first is greenish but ultimately becomes a pale-violet shade.

Meconopsis rudis, tab. 8568.—This species is closely allied to M. aculeata, but differs in its entire or nearly entire leaves, and in possessing more than four petals to the flowers. The colour of the petals is stated to be sky-blue, sometimes tinged with purple ; *The Botanical Magazine* plate shows them a washy magenta. Like many other Chinese plants, this species was first discovered by the Abbé Delavay, who sent specimens to M. Franchet, who apparently considered it identical with M. racemosa. Living plants were first introduced by Mr. E. H. Wilson whilst collecting on behalf of the Arnold Arboretum, and it was from seeds received from Professor Sargent that the Kew specimens were raised. At Kew the species has proved hardy, but all the plants died soon after they had ripened their seeds.

Rosa setipoda, tab. 8569.—This species of Rose was first discovered by Professor Henry in Central China. Living plants were sent home by Mr. Wilson, and specimens flowered in the Coombe Wood Nursery, producing bunches of single, rose-coloured blooms. The plant can be propagated easily by means of cuttings of ripened wood inserted in the autumn.

Zingiber Mioga, tab. 8570.—This is an old plant in cultivation, having been grown in conservatories for more than a century. It is found wild in Japan, and is often met with as a cultivated plant in Japanese gardens. The specimen which furnished the material for *The Botanical Magazine* plate was imported from Japan by Mr. H. J. Elwes, and presented by him to Kew in 1912. The flower is a very pale yellow, and the leaves, like most of the Gingerworts, are very handsome.

Cotoneaster Franchetii, tab. 8571.—This species was first introduced into European gardens by Mr. M. L. de Vilmorin, who received seeds from the Abbé Soulie in China. Wilson subsequently met with the plant in various localities in Western Szechuan at altitudes of from 6,500 to 9,500 feet, where it forms a graceful shrub about 8 to 10 feet high, with axillary bunches of rose-coloured flowers, which are succeeded by orange-red berries. From the appearance of the fruiting spray, the plant has considerable garden value, and as it is very hardy, grows freely in ordinary soils and is easily increased by cuttings inserted at the end of July, it will no doubt be planted freely in shrubberies.

Another Show Abandoned.—We are informed that the Birmingham and Midland Counties Chrysanthemum Show, arranged to take place in November, has been abandoned.

Javanese Insect Galls.—The *Bulletin du Jardin Botanique de Buitenzorg*, deuxième serie, N. XV., contains W. and J. Docters van Leeuwen-Reijnvaan's seventh contribution to the description and illustration of the Insect Galls of Java. This part includes an index to the whole seven parts, and brings the number of species described up to 500, 230 of which are figured. The index is primarily to the plants with parallel columns indicating the class of insect and place and date of publication. In an introductory note the authors state that their enumeration is by no means exhaustive, as the results of a recent visit to the Moeriah Mountains go to prove. There alone they collected about seventy species previously unknown to them. At Alpine elevations not a single insect gall was found, though fungus galls were observed on a number of plants.

Alien Plants Naturalised in New Zealand.—It is a well-known fact that a very large number of plants have become colonised in New Zealand, and in some districts the native vegetation has been almost entirely replaced by a foreign element. Mr. T. F. Cheeseman enumerates in his *Handbook of the Flora* (*1906*) upwards of 500 introduced plants ; which appeared to be thoroughly established ; some of these are common throughout the islands. Two species of Willow are so fully naturalised that they have altered the aspect of the river banks. Thus, Salix fragilis is abundantly naturalised on the banks of the larger rivers throughout the North and South Islands, and S. babylonica, the Common Weeping Willow, is "copiously naturalised on the banks of the Northern Wairoa, Waikato and other streams." The same botanist has recorded additions to his original list. Interesting among these is the existence of the Common Alder. He says :—"Old trees of the Alder have spontaneously appeared in not a few stations along the banks of the lower Waikato (North Island), from Huntly to within a few miles of the mouth of the river. Probably they have originated from seeds floated from Taupiri, where, I understand, it was planted by the missionaries prior to 1850. The Willows, which now form a continuous fringe along the banks of the river, have doubtless originated from the same source." Among other recent additions to the alien flora are :—Polygala virgata, Cape ; Tribulus terrestris, widely spread in warm countries ; Psoralea pinnata, South Africa ; Jasione montana, British ; Euphorbia segetalis, Mediterranean region, and Hydrocleys nymphoides, a handsome South American aquatic.

The Age and Growth of the Kauri.—The Kauri, or Kauri Pine, Agathis australis (Dammara australis), is the largest tree of the New Zealand forests, and perhaps the most useful, yielding timber unsurpassed in quality and the variety of purposes to which it may be put, and a gum-resin, from which a valuable varnish is prepared. In dimensions this tree, both in the size of the trunk and in total height, considerably exceeds all others in New Zealand. A number of authors have written on the subject, partly from exact measurements, but more largely from imperfect and incomplete observation, leading to false deductions. Mr. T. F. Cheeseman, the author of the latest *Handbook* of the New Zealand flora, gives the results of many years' practical, exact investigation of the dimensions and age of the Kauri, in the *Transactions of the New Zealand Institute*, vol. xlvi., pp. 9-19. He has little to say about the extreme height the Kauri attains, but in his *Handbook* he gives it as 150 feet, whilst other writers estimate that it sometimes reaches 180 feet. Cheeseman is more concerned with the age and rate of growth. T. Kirk estimated that a tree with a trunk 7 feet in diameter must be 1,260 years old. A gigantic specimen at Mercury Bay, which is 80 feet to the lowest branch and the trunk 24 feet in diameter, he considered must be over 4,000 years ; and another fine tree at Maunganui Bluff, girthing 66 feet, not less than 3,600. Cheeseman tabulates twenty-nine countings of annual rings in sections of trunks, ranging from 6 inches to 11 feet in diameter, and arrives at an average of 9.7 rings per inch radius. Now, Kirk calculated that a tree 7 feet in diameter would give rings at the rate of thirty per inch of radius. Cheeseman tested his own countings of the number of rings in an inch radius in trunks of various ages and diameters, and found no evidence of the number of rings being greatly increased in mature trees. Indeed, the average in trunks 2 feet to 4 feet in diameter was the same (10.9 inches) as in trunks 6 feet to 11 feet in diameter. Calculated on this basis the ages of the two very old trees mentioned above would be :—Mercury Bay tree, 1,396 years, instead of considerably over 4,000 ; and Maunganui Bluff tree, 1,280 years, instead of 3,960, as estimated by Kirk.

Green Wood.—The wood of various trees—Oak, Beech, Ash, Hazel, Alder and Birch—is found occasionally to be of a green colour, and such green wood is used in the South of England and elsewhere for the manufacture of Tunbridge ware. The greenness has been attributed on fairly conclusive grounds to the presence of a fungus, Chlorosplenium aeruginosum (Oed.) de Nat. in the wood. That this is indeed the case has been proved definitely by Brooks (*Trans. Brit. Mycological Society*, 1913), who has infected Ash and Oak with pure cultures of this fungus and has shown that the wood takes on a characteristic green colour as the consequence of the spread of the fungus hypha through it. The nature of the green pigment, which takes the form of amorphous lumps, is undetermined. There is no doubt, however, but that it is a waste product excreted by the fungus. If green wood is of sufficient commercial importance to make its artificial production worth while it should be easy to produce it in large quantities by this method of "pure culture."

Sterilisation of Soil.—Experiments carried out at the National School of Agriculture at Rennes (*Journ. d'Agric. Pract.*, April 23, 1914) confirm the conclusions of earlier experiments that soil sterilisation by the aid of antiseptics increases the yield of crops. Trials with White Mustard grown in boxes showed beneficial results from the use of toluene, carbon disulphide, formaldehyde and tar. In field experiments also with Mustard similar results were obtained, and it was found that toluene, carbon bisulphide, and and formaline were effective when applied in amounts up to 10 cubic centimetres per square metre. Tar was effective in small quantities (1 cc. per square metre), and permanganate of potash proved very useful when used even in so small a dose as 5 grains per square metre.

Chemical Manures and the Maturing of Fruit.—Experiments conducted by Messrs. G. Riviere and G. Bailhache (see *Jour. d. l. Soc. Nat. d'Horticulture de France*, June, 1914) indicate that artificial manures are without effect on the rate of maturing of Pears. The investigators used double phosphate of ammonia and potash, and applied the fertiliser at the rate of 1 grain to 10 litres of water per week per tree. The Pears used in the experiment were the variety Passe-Crassane (two trees). Those treated as indicated above showed no earlier ripening than others which received no artificials.

The Preservation of Wood by Steaming.—The following methods of preserving timber are described by Mr. A. J. Wallis-Tayler, in a letter communicated to the Royal Society of Arts on June 12 :—"In the report of the Committee on Miscellaneous Subjects to the American Wood Preservers' Association, contained in the lately-published *Proceedings* of the tenth annual meeting held at New Orleans—which report deals with steaming processes for ties and timbers—the following conclusions are given as having been arrived at by the committee, based on the replies received from operators at the principal timber-treating establishments in America:—1. All efficient plants should be equipped to steam material when occasion requires, and the best method of introducing and distributing steam in the retort or cylinder is by means of perforated pipes. 2. Steaming of ties, timber and lumber is apparently not injurious to the wood, if the work is conducted intelligently and within certain limits of temperature and duration. 3. It is difficult to inject any considerable quantity of preservative into green ties and timbers unless given a preliminary steaming or boiling in oil. One of the principal factors influencing the absorption of any kind of preservative is the moisture content of the wood—the drier the wood the more it will absorb, consequently the more thorough the treatment. 4. The object of steaming is to put the wood in a condition to secure the maximum penetration with the desired amount of preservative, and admits of the immediate treatment of green or fresh cut material. 5. Theoretically, steaming of green material preliminary to air seasoning should materially reduce the period of air seasoning."

Siberian Yellow Pine. - Timber merchants are constantly on the look-out for new sources of lumber, and at the present time attention is being paid to the forests of Eastern Siberia, Manchuria and Korea, from whence a good class of Pine wood, equal in quality to yellow and red Pine of North Europe, and Canadian yellow Pine, is procured. Writing in the *Kew Bulletin*, *W. D.* states that during the last two or three years several experimental cargoes have been brought to European ports, where the timber appears to have created a good impression, although the heavy freight charges incidental to its 12,000 miles journey are a serious handicap in its competition with European and North American Pine woods. A Liverpool merchant gives the freight charges per standard of Canadian Pine to Liverpool as about £2 2s. 6d., whereas the charges per standard from Eastern Siberian ports is about £7 10s. In its favour is the fact that larger timber can be procured, at the present time, from the Far East than from the readily accessible European and North American forests, imported logs of Siberian Pine being from 18 to 23 feet long, whereas Canadian Pine logs are often less than 16 feet in length. The difference in the cost of freight would appear, however, to outweigh the profit that would be likely to occur from the larger timber, or by the cheaper price of felling and handling of the Asiatic kind. Siberian yellow Pine is the timber of Pinus koraiensis, a large tree growing up to 150 feet high in Eastern Siberia, Korea, Manchuria, etc. It belongs to the five-leaved group of the genus, and is recognised by its cylindrical, resinous winter buds, by the pubescent bark of the young wood, its dark green leaves 3½ to 4½ inches long, each with two glaucous lines running the full length, and by its cylindrical cones, which are from 5 to 7 inches long with stalks an inch or so in length. The scales of the cones are large and prominent, and the basal ones are recurved. It has been grown in English gardens since 1861, the date of its original introduction by Mr. J. G. Veitch. It does not, however, take kindly to our gardens, and few fine specimens are known.

The Camphor Industry in Japan. — The Camphor Monopoly of the Department of Finance in Japan has been conducting experiments with the view to producing camphor of commercial value from leaves and branches of the Camphor tree. Experiments have been carried on for some time, but on too small a scale to ascertain the commercial possibilities of the process. An experimental station has been established in Fukuoka Prefecture, in a Camphor forest on Mount Tempai. This forest has an area of 35½ acres, and contains 58,000 trees, planted in 1908. The young leaves of the Camphor tree are distilled, and the distillate is then analysed to obtain the percentage of camphor produced. The experimental station has a capacity of 2,000 gallons of distillate a day. Four hundred pounds of leaves are required to produce 317 gallons of distillate; four distillations are made every day, and the distillate is examined every three hours to obtain the percentage of camphor. The residue is then used for fuel. Distillates have been prepared from the leaves of young and old trees, from large and small trees, and from the branches of the trees as well. It is expected, as a result of these experiments, that a great impetus will be given to the production of commercial camphor in Japan. *Journal of the Royal Society of Arts.*

THE WISLEY TRAP.

A SLEDGE TRAP FOR THE TURNIP FLEA BEETLE (TURNIP FLY).

Many are now sowing, or have sown, Turnips, and it is probable that the young plants may be attacked by flea beetles (Turnip fly). These are very small, bluish beetles, that jump nimbly like fleas, eat small holes in the young leaves of the plants from the time that they first come up, and check the growth of the seedlings very considerably.

The following simple device (see fig. 71), invented by Professor Lefroy, Entomologist to the Royal Horticultural Society, serves as an effective trap for these beetles. To a frame made of six pieces of half inch deal 20in. long, two pieces of thin board (20in. by 5in.) are fixed so as to slope outwards and upwards, on the sides of the frame. These sloping boards are held apart by a cross bar and an end piece, so as to have four clear inches between them at the bottom. The two bottom outer pieces of the frame are made ½in. deeper than the inner pieces, the whole trap riding on the outer pair as a sledge on runners. The ends are rounded off to allow of the free running of the "sledge." The sloping boards, the end pieces facing them, and the cross piece between them are greased. From the cross bar between the sloping pieces hangs a loop of stout string, and for drawing the sledge strings four feet long are attached to the front top corners.

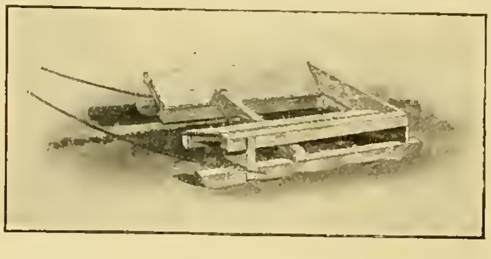


Fig. 71.—the wisley trap for the turnip flea beetle.

If the trap is drawn along each row of Turnips so that the young plants pass under the cross bar and are brushed by the string loop, the beetles leap up and alight on the sticky boards. There they perish.

If made of deal this apparatus is so light that a child can draw it along the rows; it is best for two persons to draw the trap and for them to walk a few feet away on each side so that the beetles are not disturbed until the sticky boards reach them. If two persons are not available, one can work the trap, drawing it with outstretched arm, and walking so that the shadow falls on rows already done.

Satisfactory sticky substances include: Messrs. Wood and Son's Currant Gall Mite Grease and Smearing Grease (1s. 3d. a tin); The S. P. Charges Co., St. Helens, "Morlar" Hop Wash (1s. a tin).

This little device was designed to deal with the hordes of flea beetles on the Turnips at Wisley. It works so pleasantly and there is such a charm in mopping up the flea beetles that the above description is published. The method may no doubt be adapted to large cultivation by making a number of sledge traps in series so as to do, say, five rows at once; but the present pattern is intended for garden use.

The accompanying illustration (see fig. 71) shows the ease with which the "Wisley" trap can be made. Those who wish to purchase traps can obtain them from Messrs. Wood and Son, North British Wharf, Wood Green, N., carriage paid for 3s. 6d. The traps may also be obtained, carriage forward, from Mr. Paddle, 26, Loring Road, Isleworth, at 2s. 3d., and from Messrs. Walker and Sons, London Road, Isleworth, at 2s. 6d.

HOME CORRESPONDENCE.

Lilium Sargentae at Monreith.—This scarce and beautiful Lily has been doing well in Sir Herbert Maxwell's garden at Monreith, Wigtownshire. This vigorous and beautiful Lily has handsome, funnel-shaped flowers of a kind of milk-white, with a yellow throat, and reddish-brown on the outside. Its fragrance is an additional charm. At Monreith it has been growing on a dry bank and in full sun, and it has also been doing well in a bed among dwarf shrubs devoted mainly to Lilies, and artificially watered by means of perforated pipes, into which the water can be turned as desired. *S. A.*

Experiment in Potato Planting.—As an amateur gardener I made an experiment which may interest your readers. The details were as follows:—

Date of planting.	Weight planted.	No. of Potatos.	How planted.	Date of digging.	Weight.	No.
1914, March 26	4¾ lbs.	25	Whole Potatos.	Aug. 24, 1914	15 lbs.	266
,, ,,	,,	25	Cut do.	,,	11½ ,,	200
,, ,,	,,	66	Small uncut "setters"	,,	20 ,,	250
,, ,,	,,	25	"Eyes" (cut out) only	,,	29 ,,	335

Total weight planted .. 19 lbs. Total weight produced .. 75½ lbs.

Total Potatos planted 141 Total Potatos produced 1,051

The experiment was with early Potatos planted on the same patch of ground, and I believe the Potato crop is very indifferent this year throughout the country. I am not quoting this to show any good result, but simply by way of comparison in the mode of planting, because it may surprise many as it did me that by cutting out and planting the "eyes" only, the result both in weight and numbers was immensely in favour of this somewhat singular method, and, of course, to the frugal the seed from which the eyes were cut could be used as food. Possibly this letter may bring forth from those better versed in such matters reasons for this result; may be that the decay of the "set" (when planted as whole or cut Potatos) is prejudicial to production. *William Burrough Hill, Bridell Lodge, Regent's Park, Shirley, Southampton.*

Apple Trees on Grass Land. — I wish many more persons who attempt to grow Apples on grass could read and profit by your remarks on this subject when dealing with the Woburn experiments in the leading article for July 25. To me, having had experience of both methods, the sight of thousands of trees that are lingering in fields and orchards with grass growing densely about them is a pitiable one, and it is astounding, too, that those who know better continue the practice. Where the soil is stiff and naturally unsuitable for fruit culture unless it is deeply trenched, the trees quickly show the ill-effects of the growing grass on the surface. First the leaves lose their rich green colour. Lane's Prince Albert, as you remark, is the first variety to show this defect. Secondly, the trees lose vigour and inclination to flower, and lastly the fertilisation properties are destroyed. There are, of course, instances where extremely fine fruit is obtained from trees growing with grass. At Aldenham House Gardens such Apples as Cox's Orange Pippin, King of the Pippins and Lord Derby flourish admirably. Some may be inclined to ask, why is this? The answer is, some years ago the gardener, Mr. Beckett, saw that the trees, both large and small, were not in a thriving condition, so he thoroughly trenched the whole of the orchard 3 feet deep. Since that was done the trees have flourished, though the whole surface was put down to grass, except around the smaller trees; but Mr. Beckett has found it necessary to remove the grass in a circle around the stems of the trees, so that he can feed them more effectually. Some years ago I had experience with 2,000 trees; after they had been growing ten years I allowed the grass to grow over the surface to save labour; in two years the ill effects of this method of treatment were visible in the gradual loss of colour in the foliage and in diminishing vigour. I quickly abandoned this method, and now the trees are flourishing again. The surface for the greater part of the year is kept quite clean of growth, but during the time when the Apples are coming to maturity the weeds are allowed to grow (but not seed), as a clean surface for falling fruit and as a convenience in getting among the trees, the soil here being of a sticky nature. Afterwards, during dry weather, the weeds are removed and burnt on the site, the ashes being spread over the surface. Digging among the bulk of the trees is not now practised. I do not think it is necessary. Those who have a heavy, retentive soil with a hard pan subsoil below such as I have here will be surprised at the portion of the report in which Mr. Pickering remarks that "the results are not worth the expense of the operation." I tried the plan of planting trees without trenching the ground. The trees of Cox's Orange Pippin Apple quickly showed their resentment of such cheeseparing policy by becoming cankered so much that many of them died back considerably and I was compelled to take them up and trench the ground deeply, getting rid of the hard pan subsoil some 18 inches below the surface which prevented a free percolation of water after heavy rains. The roots had been waterlogged, causing a check to growth, and resulting in canker annually in November of the current season's shoots. The result under the altered rooting conditions is quite satisfactory. I find that trees growing on cultivated land do not require the same amount of manure as those on grass to keep them in a flourishing condition. Many of the Apple trees in this orchard have not had manure of any kind for many years, yet they grow freely, and by the appearance of their leaves do not appear to need stimulants. There are certain varieties of Apples that will grow better with grass than others; for example, Bramley's Seedling, Gascoyne's Scarlet Seedling, Warner's King, and Mère de Ménage, owing to their extra vigour; even these succeed better in cultivated soil. *E. Molyneux.*

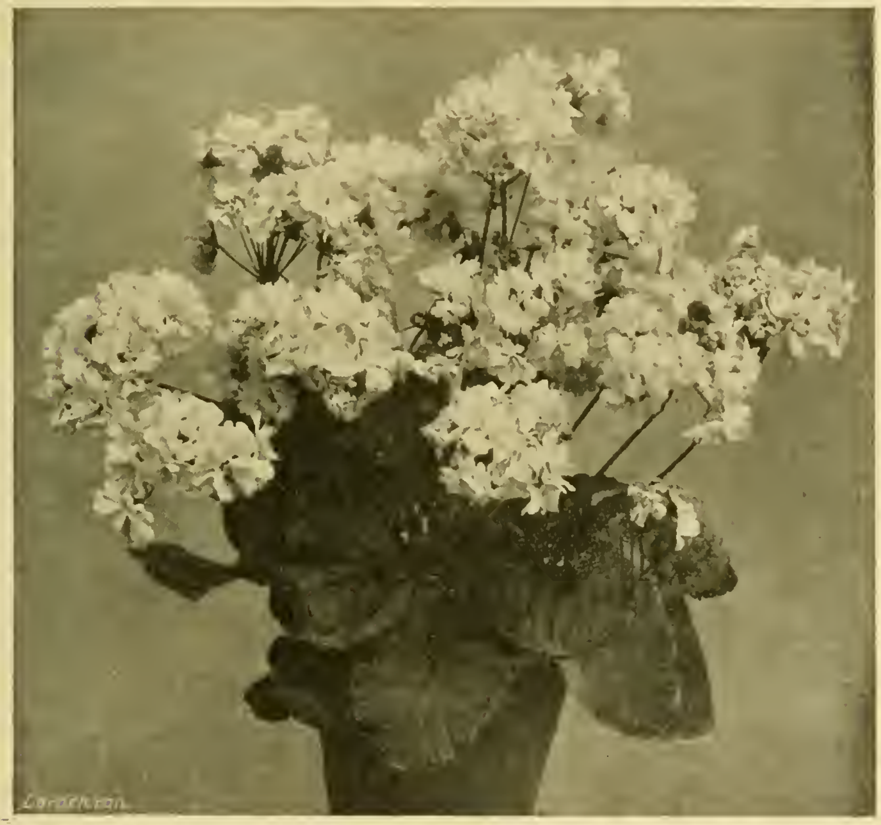


Fig. 72.—Semi-double variety of Primula obconica.

Wasps.—The disproportion between the number of queen wasps in spring, which here, as elsewhere, was very large, and of workers now, which is much below the average, is so remarkable as to be well worth recording. Here no organised steps were taken to destroy the queens, nor was the weather at all unfavourable to them, the lowest temperature on the grass since May 1 having been 35°. It would seem as if the money paid for queens was thrown away. It is doubtful if there were not as many queens in May and June as there are workers now. *Alfred O. Walker, F.L.S., Ulcombe Place, near Maidstone.*

—— I have had much experience of insect attacks, but the present liking of wasps for Dahlia stems and leaf-stalks is new to me. Another peculiarity is the wasps will only have one variety, Duke Henry. The white, yellow and mixed colours they leave severely alone. There are no insects on any of my plants or honeydew, nor have we used any artificial manure on any of the plants. There are vineries within a dozen feet of the Dahlia quarter, but they prefer the stems of the Dahlias to the Grapes. *N. F. P.*

—— I was interested to see in your last issue, page 168, that the practice of wasps attacking the stems of Dahlias is comparatively unknown. During the past five seasons my experience here has been that wasps have stripped the bark off our Dahlias, about eighty-five plants, on one side only of the stem, and from the rootstock, 6 to 9 inches, up to the point where the first break occurs on the plant. I had a vague idea that something in the tubers was attracting them, as they always commenced to work at the bottom and never went far from the root. This season I planted in holes 9 inches below the ground surface, and when the plants were 2 feet high I had the holes levelled, covering 9 inches of stem, and although wasps are plentiful very little damage has been done so far to the Dahlias. The first year I noticed the Dahlias being damaged by wasps the plants were near to the Muscat vineries, and the wasps seemed to prefer the Dahlias. This year the wasps are making inroads on the Muscats, and the stems of the Dahlias are not eaten. As we appear to have to feed them with something perhaps Dahlias would be cheaper food. *Charles Coppen, Castle Boro' Gardens, Clonroche, Co. Wexford.*

DOUBLE PRIMULA OBCONICA.

Like many another cultivated plant, Primula obconica has begun to take on a double form. The illustration (fig. 72) shows a plant the flowers of which are semi-double. It comes from Mrs. Blair's garden. Burton Closes, Blakewell, and according to the observation of Mr. James Dunn it arose as a chance seedling about 8 months ago.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(*See Tables and Summaries, ante, pp.* 87-93.)

(*Continued from p.* 167.)

Surrey.—Strawberries suffered badly for want of rain, and were damaged by late spring frosts. Gooseberries were unsatisfactory. Several growers in the district suffered from a hailstorm in June, Pears and Apples being badly bruised by hailstones, which this garden escaped. The soil here is very sandy. *Jas. Lock, Oatlands Lodge Gardens, Weybridge.*

—— The hardy fruit crops are very good. A severe thunderstorm on June 14 was accompanied by heavy hailstones, which in many cases damaged the tender skin of Apples; but we are not adversely affected to any extent. The soil of this district is chiefly light loam over gravel; in parts, however, a heavy clay subsoil occurs, but this is rare. Fruit generally attains high colour, is full flavoured, but is usually small. *Thos. Smith, Coombe Court Gardens, Kingston Hill.*

Sussex.—There are good crops of Apples, Pears and Plums, and a fair number of Apricots. Cherries were a record crop, and Peaches and Nectarines about the average. Bush fruits all cropped heavily, but the fruit was rather small owing to drought. The soil is a heavy loam, and has this season needed much attention to keep it in proper order. *Thos. Tyson, Wykehurst Park Gardens, Haywards Heath.*

—— The fruit crops generally are average in quantity. Strawberries were rather small; Currants, Gooseberries, Raspberries and Loganberries were all plentiful and of good quality. Apples are not plentiful. Pears look extremely well. In gardens and orchards where spraying has been done thoroughly the trees are in good condition, and the advantage of lifting and rootpruning the trees is shown in the fine crops. The soil in this district is heavy clay. *W. J. Langridge, Ote Hall Gardens, Burgess Hill.*

—— The fruit crops vary considerably. In some gardens there is scarcely any fruit at all, whilst in others there are good crops. Frost on May 26 and 27 did considerable damage. In one garden 13° were registered, and many trees and plants were severely injured. The soil is sandy, and the gardens are well sheltered from north and east winds. *J. W. Buckingham, Milland Place Gardens, Liphook.*

Wiltshire.—Strawberries produced an abundance of blossom, and it seemed likely to be a record crop, but on May 26 as much as 6° of frost blackened a considerable number of flowers, and spoilt much fruit that had set on early varieties, chiefly Royal Sovereign. Pears Doyenné du Comice, Marie Louise, Beurré Superfin, Louise Bonne of Jersey, Williams' Bon Chrêtien and Charles Ernest on walls are fruiting satisfactorily. We have also good crops of Ribston Pippin and Cox's Orange Pippin Apples, but orchard trees of Blenheim Pippin are very thinly fruited. The gardens are situated on a northern slope. The soil is a medium loam resting on chalk marl, with a stratum of green sand below. *T. W. Birkinshaw, Compton Bassett Gardens, Calne.*

—— All fruit trees blossomed remarkably well, especially Pears. The Pear midge, which up till this year has been increasing rapidly, was destroyed by spraying. Four degrees of frost at the end of May destroyed the late flowers of Strawberries and reduced the crop considerably. Our soil is loamy and rather shallow. The subsoil is heavy, yellow clay. *H. Gandy, Longleat Gardens, Warminster.*

7. ENGLAND, N.W.

Cumberland.—The fruit crops generally are good in these counties. Dry weather was responsible for a considerable number of Apples dropping, but there is still a good crop left. Bush fruits were very plentiful indeed. *W. B. Little, Carlisle.*

Westmorland.—There was a plentiful supply of small fruits, and the foliage is remarkably clean and healthy. Strawberries, and particularly Royal Sovereign, were a heavy crop. Early varieties of Apples, such as Early Victoria, Lord Grosvenor and Keswick Codlin are bearing well. Late Apples, with the exception of Lane's Prince Albert, are not plentiful. This variety always does well. Pears are scarce. Marie Louise, Doyenné du Comice, and Williams' Bon Chrêtien are our best varieties. Morello Cherries are a very good crop, and the abundant rains have made them swell and cleansed the foliage. Our soil is gravel and fruit trees respond well to liberal manuring. *W. A. Miller, Underley Hall Gardens, Kirkby Lonsdale.*

8. ENGLAND, S.W.

Cornwall.—The fruit crops are on the whole more satisfactory than has been the case for several years past. I never remember seeing such a wealth of blossom on all kinds of fruit trees. Apples are not such a heavy crop as was expected, for much of the fruit dropped, but there is an average crop of most varieties. Peaches are rather uneven, certain varieties are well cropped, while trees of other sorts are almost bare of fruit. Fruit trees are very free from insect pests. Our soil is of a light nature. *W. Andrews, Tregothnan Gardens, Truro.*

—— The fruit crops generally are much more satisfactory than usual, owing to the sunny summer of 1913. The wood matured well, and there was an abundance of strong blossom this spring. Small fruits have been remarkably good, Black Currants, Gooseberries, Raspberries and Strawberries all being abnormally heavy crops. Strawberry Laxton's Latest produced a very fine crop. Apples and Pears promise well, but stone fruits are poor, the soil and climate not being suitable to these, although fair crops are obtained if special attention is afforded. The soil is a sandy or gravelly loam resting on rock. *Frank J. Clark, Tehidy Park Gardens, Camborne.*

Devonshire.—The Apple crop is very heavy: a profusion of blossom and genial weather during the setting period made the crop practically safe. Amongst many good cooking Apples and as an early variety Lord Grosvenor stands ahead of any other Codlin, the trees never failing to carry heavy crops. Market growers would be wise to plant this variety extensively. Other Apples carrying fine crops are Stirling Castle, Ecklinville Seedling, Loddington Pippin (grand), Lord Derby, Lane's Prince Albert, Warner's King, Annie Elizabeth, Worcester Pearmain, Wealthy, Egremont Russet, Braddick's Nonpareil, Ribston Pippin and Allington Pippin. Bush fruits were all good, excepting Black Currants. Our soil is a medium, light loam overlying the red Devon sandstone, and the gardens being on a hill-side the crops need watering in dry seasons. *T. H. Bolton, Powderham Castle Gardens, Exeter.*

—— The fruit crops are on the whole very good. A few gardens situated on the coast suffered from cold east winds, which completely stripped the trees of leaf and fruit. We seldom experience severe frosts in this neighbourhood in spring. The soils are, as a rule, good red loam, some places with a sandy bottom. *W. Lock, Eastcliffe Gardens, Teignmouth.*

Gloucestershire.—The Strawberry crop promised well, but was severely injured by frosts in May, which also injured the Plum crop, although there are plenty of Plums of most kinds. The Apple trees were full of blossom, but there are scores of trees with scarcely a fruit, which must be accounted for by the cold, low temperature in the spring, as there was no frost to harm the Apple crop. The trees are looking very healthy. The gardens are on a cold lias subsoil. *Wm. Keen, Bowden Hall Gardens, near Gloucester.*

—— Pears appear to be plentiful everywhere, and the crop is better than has been seen for some years past. Apple trees blossomed well, but the set was disappointing; the Apple sucker may be to blame. There is a record crop of Cherries. Red Currants were not so good, nor were the Strawberries. *John Banting, Tortworth Gardens, Falfield.*

—— The fruit crops in this county may best be described as "patchy." There were severe frosts at the beginning and also the end of May which did much damage in places to Apples, Pears, Plums, and small fruits. In districts visited by the frost crops are light, but in other parts which escaped there is a fair yield of most kinds of fruit. Insect pests do not appear to have been quite so prevalent as last year, and Apples, Pears and Plums have swollen well. *G. H. Hollingworth, County Education Offices, Gloucester.*

—— Fruit trees of all kinds are bearing abundantly. Apples, Cherries and Plums are all carrying average crops. Pears have had to be severely thinned. Gooseberries, Currants, Raspberries and Strawberries were heavily laden with fine fruits of good flavour. Orchards of Apples, Pears and Plums on the sides of hills are carrying good crops, whereas the crops in some of the orchards in low-lying districts suffered severely from frosts on May 28 and 29. *F. C. Walton, Stanley Park Gardens, Stroud.*

—— Apples, both culinary and dessert varieties, are a good average crop, and the same may be said of Pears and Plums. Fortunately the blossom escaped damage by the late spring frosts. Peaches and Nectarines are average crops, but Apricots are under. Bush fruits are good, especially Gooseberries and Currants. Raspberries were almost a failure, and Strawberries under average. Most of the early fruits of Raspberries and Strawberries were cut off by frost. *A. Chapman, Westonbirt Gardens, Tetbury.*

—— Apple, Pear, and Plum trees set good crops, but frost in May caused many of them to drop. Lane's Prince Albert Apple suffered worst, for scarcely a fruit was left on the trees. There were record crops of Currants, Gooseberries, Raspberries and Strawberries. *H. Berry, Highnam Court Gardens, Gloucester.*

Herefordshire.—There is a full and good crop of Apples, and the trees are clean; thinning had to be carried out. Pears and Plums are plentiful, and there is an especially heavy crop of Pershore Plums, but many of the better kinds of Plums are poorly fruited. Cherries are not good, the soil being too dry, and in the hot and dry weather many of the fruits dropped. Small fruits are average and good crops. Strawberries were ruined by frosts when the plants were in bloom. *Thos. Spencer, Goodrich Court Gardens, Ross.*

—— The fruit prospects were exceptionally good all round until May 26 and 27, when we experienced two very severe frosts, which destroyed the bulk of the Apples, all Raspberries, Strawberries, Plums (excepting those on wall trees), and a large proportion of the Gooseberry crop. Fortunately the Peach and other wall trees were well protected. Our soil is a heavy loam on limestone. *George Mullins, Eastnor Castle Gardens, Ledbury.*

—— The fruit crops are exceptionally good, with two exceptions—Apples and Strawberries. The former fruits set well, but dropped probably from the after effects of last season's enormous crops, as trees which failed last year have a full crop this. Strawberries were badly damaged by frost on May 1, 26, and 27, when 11°, 9°, and 6° were registered respectively. Our soil is a warm, friable loam over limestone. *A. J. Morris, Downton Castle Gardens, Ludlow.*

Monmouthshire.—There was a profusion of blossoms on all kinds of fruit trees. Apples were comparatively free of the blossom weevil and Apple sucker. Pears were severely attacked by the Pear midge, which reduced a most promising crop. Aphis has been less troublesome than usual on all kinds of fruit trees. The Apple crop varies; in some plantations there are abundant crops, while in others the yield is disappointing. Plum, Cherry and Apricot trees are heavily laden with fruit, whilst Gooseberries, Raspberries, Currants and Loganberries were all plentiful. Early Strawberries suffered somewhat from frosts, though late varieties were quite satisfactory. Peaches were badly affected by leaf blister, and their crops are light. *Thos. Coomber, The Hendre Gardens, Monmouth.*

(*To be concluded.*)

SCOTLAND.

CORKY SCAB IN SCOTLAND.

An order relating to corky scab disease in Potatos has been issued by the Board of Agriculture for Scotland. It came into force on September 1, and requires the notification of the disease to the Board, or the Local Authority of the district, by the occupier of any premises on which it exists or appears to exist. The order also makes provision for the service on occupiers of infected premises of notices prescribing the measures to be adopted for prevention of the spread of the disease. The order has been necessitated by the regulations of the United States Government prohibiting the importation of Potatos except from districts certified free from wart disease and corky scab.

GLASGOW PUBLIC GARDENS.

Flower shows and competitions in connection with several of the public gardens and allotments in Glasgow were held on the 22nd ult. The principal exhibitions were those at Hutchesontown, Pollokshaws, and Saracen Gardens, and, taking them generally, they were quite equal to former shows, although the war had the effect of reducing entries. At Hutchesontown Gardens, Mr. R. Pollock, Govanhill, was successful in winning Messrs. Pringle and Alexander's Gold Medal, and at Saracen Gardens Mr. R. Moodie had the best double plot of flowers and vegetables. *Corres.*

SOCIETIES.

LEICESTER FLOWER SHOW.

August 4 and 5.—The 27th annual exhibition, known as the Abbey Park Flower Show, was held on the 4th and 5th ult. The exhibition is promoted by the borough Parks and Recreation Ground Committee, of which Mr. J. S. Collier is chairman and deputy town clerk, Mr. J. Staynes, hon. sec. The horticultural arrangements were in the hands of Mr. J. Burton, the superintendent of the public parks of Leicester. The show was opened by the Mayor of Leicester, Councillor J. Russel Frears. The number of exhibits was slightly fewer than usual, owing principally to the falling off in trade groups. This is probably the result of very unfavourable weather a few days before the show. The schedule for 1914 was altered considerably, and several important classes added. From all points of view the show was a great success, and equal to any that have preceded it. In the Open Class for a group of plants, the 1st prize was won by Messrs. James Cypher and Sons, Cheltenham; 2nd, Mr. W. A. Holmes, Chesterfield; 3rd, Mr. W. B. Manning, Dudley. Messrs. Cypher and Sons also excelled in the classes for a single plant in bloom and for a miscellaneous collection of plants, in which Messrs. G. and T. H. Hallam and Messrs. J. Wright and Sons were 1st and 2nd respectively. Messrs. J. Wright and Sons showed the best Fuchsias, the best Zonal-leaved Pelargoniums, and the best Begonias.

Messrs. J. Barrow, Oadby, and Messrs. S. Sims and Sons, Borrowash, were placed 1st and 2nd respectively in the class for a collection of Roses. Messrs. Hugh Dickson and Co., Ltd., Belfast, excelled in the classes for 24 and 12 Roses, and also a bowl of Roses, the 2nd places being taken by Messrs. Perkins and Sons, Coventry, in the first two classes, and Mr. W. Bentley in the third. Messrs. Perkins and Sons were awarded the 1st prize in the class for 12 Tea or Noisette Roses.

Fruit.—There was an excellent display of fruit of all kinds, and in the class for 9 dishes the 1st prize was awarded to the Earl of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), Mr. W. E. Dennison, Newark, being 2nd. The Earl of Harrington was also successful in winning 1st prizes in the following classes, (a) six dishes of fruit, (b) collection of Grapes, (c) hardy fruits, (d) Peaches, and (e) scarlet Melon. Mr. J. W. Larnach, Newmarket, was successful in the classes for Grapes. Messrs. S. Sims and Sons, Borrowash, showed the best Nectarines. In the class for Melons, Mr. W. Bowman won the 1st prize.

In the Vegetable Classes, good collections were shown by Mr. E. R. James, Banbury, and Mr. G. Bartshorn, who gained 1st and 2nd places respectively. In the class for Potatos, Mr. H. J. Tilley was placed 1st and Mr. E. R. Jones 2nd.

Non-competitive Exhibits.

The following Awards were made for honorary exhibits :—

Silver Cup: Messrs. Harrison and Sons, Leicester.

Gold Medals: Messrs. Atkinson and Statter, Southampton; Mr. George Underwood, Leicester; Messrs. W. H. Simpson and Sons, Birmingham; Mr. J. Wilkins, Leicester; and Clury Nurseries, Langley, Bucks.

Silver Medals: Mr. H. N. Ellison, West Bromwich; Messrs. Jas. Wright and Sons, Leicester; Messrs. Reamsbottom and Co., Geashill, Ireland; Messrs. B. Hurst and Son, Burbage Nurseries, near Hinckley; Mr. Chas. Vickers, Leicester; and Messrs. Arthur R. Brown, Ltd., King's Norton.

BANBRIDGE HORTICULTURAL AND AGRICULTURAL SHOW.

August 13.—The sixth annual show of the above Society was held on the above date in the grounds of the Banbridge Farming Society. The promoters did excellent work, although the war crisis made matters more difficult for them, and they were repaid by the fact that the show was an excellent one. There was a fine display of all kinds of flowers, and the Roses were even better in quality than in previous years. Messrs. Hugh Dickson and Son, Ltd., Belfast, had a noteworthy exhibit of Roses, prominent varieties being Rayon d'Or, Mrs. Willie Dickson, Mrs. Robert Watson, and Mrs. Bertram Walker. An innovation at the show was the class for dinner-table decorations, which proved a very attractive feature, and the finest table was decorated with Irish Elegance Roses by Mrs. David Bailie, Banbridge. The exhibits of Sweet Peas were excellent, considering the dry season, and an attractive display was made by Mr. E. Cowdy, Loughall, County Armagh, who presented a cup for the best Sweet Peas in the show, and it was awarded to Mrs. Charles F. Cowdy, Banbridge. There was a great improvement in the quality and size of the vegetables shown, and there were fine samples of Potatos, Turnips, Leeks, and Parsnips.

MARKETS.

COVENT GARDEN, September 2.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	0 6- 1 0
— smaller, per doz. bunches ..	2 0- 4 0
— Carola (crimson), extra large	1 0- 1 6
— Malmaison, per doz. blooms	
— — pink ..	5 0- 6 0
Chrysanthemum, Almirante, bronze, per doz. blooms .	0 9- 1 0
— Ashley, pink, per doz. bun...	3 0- 4 0
— Betty Spark, Pink, per doz. bunches ..	6 0- 8 0
— Countess, white, per doz. blooms	1 0- 2 6
Hollycott, Bronze, per doz.	1 3- 1 6
— Martin, yellow, per doz. bun....	3 0- 4 0
— Mercedes, yellow, per doz. blooms ..	1 0- 2 0
— Mrs. Beech, bronze, per doz. blooms ..	0 8-0 10
— Princess, pink, per doz. ..	2 0- 2 6
— sprays, white, per doz. bun...	4 0- 6 0
Coreopsis, per doz. bunches ..	0 6- 0 9
Delphinium, large blue, per doz. bunches ..	3 0- —
Eucharis, per doz.	1 6- 2 0
Gaillardia, per doz. bunches ..	0 9- 1 0
Gardenias, per box of 15 and 18 blooms	1 3- 1 6
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus, America, pale pink, per doz. spikes ..	0 6- 1 0
— brenchleyensis, scarlet, per doz. spikes	0 9- 1 0
— Pink Beauty, per doz. spikes	0 6- 0 9
Gypsophila, white	2 0- 4 0
— — double, per doz bunches ..	3 0- 4 0
Lapageria alba, per doz. blooms ..	1 0- 1 6
Lavender, per bnch.	0 6- 0 9
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long ..	0 9- 1 0
— — short ..	0 9- 1 0
— lancifolium album, long ..	1 0- 1 6
— — — short ..	1 0- 1 6
— — rubrum, per doz., long ..	0 8 0 10
— — short ..	0 6 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	9 0-10 0
— special	7 0- 8 0
— ordinary ..	4 0- 5 0
Marguerites, per doz. bunches ..	0 9- 1 0
Orchids, per doz.:	
— Cattleya ..	10 0-12 0
— Harrisonii, per doz. blooms ..	4 0- 6 0
— Odontoglossum crispum ..	3 0- 4 0
Pancratium, per dozen blooms ..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Physalis, per doz. bun.	6 0- 8 0
Roses: per dozen blooms, Bride	0 6- 0 9
— Bulgaria ..	0 9- 1 0
— Frau Karl Druschki ..	1 0- —
— Kaiserin Augusta Victoria	0 6- 0 9
— Lady Hillingdon	0 6- 0 9
— Liberty ..	0 9- 1 0
— Madame A. Chatenay ..	0 6- 0 9
— Melody ..	0 9- 1 0
— Mrs. J. Laing ..	0 9- 1 0
— My Maryland ..	0 6- 0 9
— Niphetos ..	0 9- 1 0
— Richmond ..	—
— Sunburst ..	0 9- 1 0
— Sunrise ..	—
— White Crawford	0 9- 1 0
Scabiosa, mauve, per doz. bnchs.	2 0- 2 6
Statice, mauve, per doz. bunches ..	1 6- 2 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	0 9- 1 0
Stocks, English, white, per doz. bunches	3 0- 4 0
Sweet Sultan, mauve per doz. bnchs.	1 6- 2 0
— yellow	1 0- 1 6
— white	1 6- 2 0
White Heather, per doz. bunches ..	0 6- 0 9

Remarks.—Business is still very slack, and there is no demand for the more expensive flowers. There are many more varieties of Chrysanthemums to be obtained, and the best now are Débutant and Almirante Bronze, both good market varieties. White varieties such as Cranford White and Roi des Blancs are both plentiful, but owing to a large supply of white Asters the prices remain very low. Roses are not so plentiful, but the prices are still low. There is a glut of Gladioli which cannot be sold at any price. Liliums still come to hand in splendid condition, and Lily-of-the-Valley is selling slightly better this week. Double white Gypsophila is nearly over. There are some fine specimens of Lapageria alba selling cheaply.

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Carnation foliage, doz. bunches ..	3 0- 5 0
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Lichen Moss, per dozen boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved ..	6 0 —
Smilax, per bunch of 6 trails ..	1 0- 1 3

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated ..	30 0-60 0
Asters, Coloured, 48's, per dozen	4 0- 6 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —

Plants in Pots.—*Continued.*

	s.d. s.d.
Campanula isophylla, white, 48's per doz.. ..	10 0-12 0
— — blue, 48's per doz. ..	6 0- 8 0
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, per dozen, 60's	6 0-12 0
— larger, each ..	2 6-10 6
Croton, per dozen	18 0-30 0
Dracaena, green, per dozen ..	10 0-12 0
Erica nivalis, 48's, per dozen ..	10 0-12 0
— — thumbs, per doz. ..	5 0- 6 0
— gracilis, thumbs, per doz. ..	4 0- 6 0
Ferns, in thumbs, per 100.. ..	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0
Ferns, in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz. ..	4 6- 5 0
— — 60's, per doz.	3 0- 3 6
Fuchsias, 48's, per dozen	5 0- 6 0
Geonoma gracilis 60's per dozen ..	6 0- 8 0
— larger, each ..	2 6- 7 6
Hydrangeas, pink, per doz. 48's ..	10 0-18 0
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0
Kentia Forsteriana, larger, per doz.	18 0-36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz. ..	15 0-21 0
L. longiflorum, per dozen	12 0-15 0
Lily-of-the-Valley	12 0-18 0
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	4 0- 6 0
Palms, Cocas Weddeliana, 48's, per doz. ..	18 0-30 0
— — — 60's, per doz.	8 0-12 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Spiraea, white, 32's per dozen ..	6 0- 8 0
— Pink, 32's, per dozen	9 0-12 0

Remarks.—Flowering plants do not seem to be required at any price. Ferns are arriving in excellent condition, and receive more attention than other things in this department.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, English dessert, per ½ bush.	1 6- 2 6
— cooking, 1 bush.	2 0- 3 0
Bananas, bunch:	
— Double Ex. ..	8 0-9 0
— Extra	7 0-7 6
— Medium ..	6 0- 6 6
— Giant	9 0- 0 6
— Extra-medium	6 0 —
— Red, per ton ..	£20 —
— Jamaica, p. ton	£15 —
Blackberries, per lb.	0 2- 0 3
Cobnuts, per lb. ..	0 3- 0 4
Damsons, per ½ sieve	1 0- 1 6
Figs, English, per doz.	1 0- —
Grapes: Black Hamburgh, per lb.	0 4- 1 0
— English, Gros Colmar, per lb.	0 6- 1 0
— Gros Maroc, per lb. ..	0 4- 1 0
— Muscat of Alexandria ..	1 0- 1 9
Grapes, Canon Hall, per lb.	1 0- 3 0
Grape Fruit, case:	
— 96's ..	18 0-25 0
— 80's ..	
— 64's ..	
— 54's ..	
Greengages ..	4 0- 6 0
Lemons, Naples, per case ..	12 0-14 0
— Palermo, per case	7 0-10 0
Melons, English ..	0 6- 1 6
— Canteloupe ..	1 0- 2 6
— Guernsey ..	0 6- 1 6
— Valencia, per case	8 0- 9 0
Peaches, English, per doz. ..	1 0- 6 0
Pears, English, ½ sieve	3 6- 7 0
Plums, English, per ½ bushel ..	1 6- 3 0

Remarks.—There are large stocks of Apples on hand at £2 to £3 per ton, and Plums are also plentiful and are selling at £4 to £5 per ton. Grapes of all varieties are very plentiful, and the supply of Peaches is in excess of the demand. Californian boxed Pears are now available, and English and French Pears have been very plentiful. There is also a good supply of Damsons. Bush Plums and Tomatos can only be cleared at very low rates. Good samples of Cobnuts are now available. Cultivated Mushrooms are scarce, which is usual at this time of the year. Arrivals from the Continent this week include Cucumbers, Tomatos, Pears and Melons.—*E. H. R., Covent Garden, September 2, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, ground, per ½ sieve ..	1 0- 1 6
Beans, Scarlet Runner, per bushel	0 9- 1 0
Beetroot, per bushel, long ..	3 0 —
— round	2 0 —
Cabbages, per tally	8 0-10 0
Carrots, per doz. ..	1 0- 1 3
Celery, per bundle	0 8- 0 9
Cucumbers, per flat	3 0- 4 0
Garlic, per lb. ..	1 0- 1 3
Horseradish, 12 bundles ..	18 0-21 0
Leeks, per dozen ..	2 0- 3 0
Lettuce, English, Cos, (per tally 5 doz.).. ..	7 6-10 0
Lettuce, English, round, per box	4 6 —
Marrows, per tally	2 0- 3 0
Mint, per doz. ..	2 0 —
Mushrooms, cultivated, per lb...	1 0- 1 3
— Buttons ..	1 0- 1 3
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per bag ..	5 0- 7 0
Parsley, per dozen bunches ..	3 0- 4 0
Peas, English, bushel	3 0- 4 0
Radishes, per doz.	1 6- 2 0
Sage, per dozen ..	1 6- 2 0
Spinach, per bushel	2 6- 3 0
Swedes, bag ..	1 6- 2 0
Tomatos, English, per doz. lbs. ..	1 6- 2 0
— seconds ..	0 9- 1 0
Thyme, per dozen bunches ..	2 0- 6 0
Turnip, English, per dozen bunches	3 0 —
Watercress, per doz.	0 4- 0 6

Remarks.—Trade is fair, but is being transacted at lower rates, excepting Cabbages and Mushrooms.—*E. H. R., Covent Garden, September 2, 1914.*

New Potatos.

	s. d. s. d.
Bedford	3 3- 3 9
Blackland	3 0- 3 3
Lincoln	3 3- 4 0
Kent	3 6- 4 0
Essex	3 0- 3

Remarks.—Trade not very fast. Arrivals quite equal to demand. Prices remain about the same as last week.—*E. J. Newborn, Covent Garden and St. Pancras, September 3, 1914.*

THE WEATHER.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending August 29, is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

September 1, 1914.

The distribution of pressure was mainly cyclonic, and the weather was therefore of a generally unsettled character. In the earlier half of the period two depressions of moderate intensity skirted our extreme western and north-western coasts, and occasioned strong winds from the southward in Ireland and Scotland, while in the brief interval separating the passage of these systems a small secondary disturbance advanced in a north-north-easterly direction from the Bay of Biscay to the East of England. Between Sunday and Wednesday thunderstorms occurred at several of the English stations, and heavy rain was experienced at many places situated in the western and northern parts of the United Kingdom. On the 23rd a fall of 1.2in. was recorded at Killarney, and 1.3in. at Fort William; on the 24th a fall of 1.1in. at Scarborough; and on the 25th a fall of 1.1in. at Valencia, and 1.3in. at Douglas (I.O.M.) and Arlington. In the latter half of the week a large anticyclone extended slowly over the United Kingdom from the southward, and the wind became generally south-westerly or westerly. A decided improvement in the weather now took place over England, but in Ireland and Scotland the conditions remained unsettled, with heavy falls of rain in places. On the 29th the measurement amounted to 1.1in. at Valencia and Dublin (Phoenix Park).

Throughout the week a good deal of fog or mist prevailed on various parts of our coasts, more especially in the north and east. A brilliant meteor was seen at Newquay on the evening of the 29th.

THE WEATHER IN WEST HERTS.

Week ending September 2.

The fourth warm and dry week in succession.—This was the fourth warm week we have had here in succession. On five days during the week the highest temperature in the thermometer screen exceeded 75°, and on the hottest day reached 80°. On the other hand, on one night the exposed thermometer fell to within 7° of the freezing-point. The ground is at the present time 2° warmer at 2 feet deep, and 3° warmer at 1 foot deep than is seasonable. On the first day of the week an insignificant amount of rain fell, but since then the weather has been perfectly dry. In fact, during the last three weeks only a quarter of an inch has altogether fallen. During the same period there has been no percolation of rain-water at all through either of the soil gauges. The sun shone on an average for 6¼ hours a day, which is three-quarters of an hour a day longer than is usual at this period of the year. Light airs and calms alone prevailed during the week. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as eleven per cent.

AUGUST.

Exceptionally warm, dry, and calm.—Taken as a whole, this was, with six exceptions, the warmest August experienced here during the last 28 years. The first ten days were rather cool, but after that the highest temperature in the thermometer screen on only two days fell below the average maximum temperature for the month. There were, however, five cool nights during that period. On the hottest day the temperature in the thermometer screen rose to 81°, and on the coldest night the exposed thermometer fell to within 4° of the freezing-point. Both of these extreme temperatures are in no way remarkable for August. Rain fell on thirteen days, eight of these being in the first eight days, to the total depth of 1¼ inches, which is only about half the average quantity for the month. The sun shone on an average for six hours a day, which is about the average duration for August. This was, with four exceptions, the calmest August during the last 28 years, and in no hour did the mean velocity of the wind exceed fourteen miles—direction W. The average amount of moisture in the air at three p.m. fell short of a seasonable quantity for that hour by one per cent.

THE SUMMER.

A warm, very dry, and sunny season.—June proved rather warm, August exceptionally warm, while July was of about average temperature. The rainfall in June was rather above the average, while July was dry and August exceptionally dry. June proved exceptionally sunny, July rather dull, and during August there was about an average duration of bright sunshine. *E. M., Berkhamsted, September 2, 1914.*

ENQUIRY.

THE SHOT BORER BEETLE. Professor Lefroy, Entomologist to the Royal Horticultural Society, will be obliged if growers of fruit in Surrey or neighbouring counties whose trees are infested with the Shot Borer Beetle (Xyleborus dispar) will communicate with him at the R.H.S. Gardens, Wisley, Ripley, Surrey. He desires particularly to learn whether there are in the neighbourhood indicated any considerable attacks of this pest.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. C. Abbott, for the past three years Gardener to A. M. GRENFELL, Esq., Roehampton House, Roehampton, as Gardener to LORD FARQUHAR, White Lodge, Richmond Park, Surrey.

Mr. W. J. Cosham, for the past four years Gardener to Miss JOHNSON, Woodlands, London Road, Redhill, Surrey, and previously ten years Gardener to W. E. OSWELL, Esq., Hillside, Grombridge, as Gardener to A. A. HEAD, Esq., Bury Hill House, Anna Valley, Andover.

Mr. George McKay, Foreman at Norwood, Alloa, as Gardener to Mrs. N. HAMILTON-OGILVY, at Archerfield, East Lothian. [Thanks for 2s. enclosed for R.G.O. Fund.—EDS.]

SCHEDULES RECEIVED.

The first Annual Exhibition of London Gardens, to be held in the Royal Horticultural Society's Hall, Vincent Square, Westminster, on Wednesday, September 9. Secretary's address, 32, Victoria Street, London.

Answers to Correspondents

BEANS DISEASED : *E. M.* The injury has been caused by aphides. The seed is not injured, and the ground may be sown again, but next time spray the plants with an insecticide at an early stage of their growth

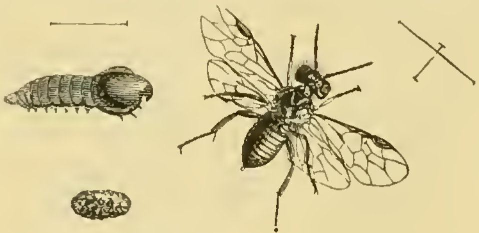


FIG. 73.—PEAR-LEAF SLUGWORM.

BLIGHT ON RIBES : *T. H. C.* There is no trace of blight on the Ribes. The plant has been scorched by the sun when the foliage was damp.

CARNATIONS FAILING : *E. F. G.* The base of the stem is injured by the fungus Thielavia basicola, and the plants cannot be saved. The soil is infected and should be treated with quicklime.

CELERY INJURED BY CERCOSPORA APII : *Oxted.* Spraying is not likely to be effective at this date, but you might try a solution of liver of sulphur or the Bordeaux mixture. Next year spray the crop with either solution before the disease appears.

CHERRY LEAVES SHRIVELLING : *Cherry.* The tree is injured by the Pear-leaf slugworm, Selandria atra (see fig. 73). The slugworms, which are covered with a greenish secretion, when about six weeks old cast their green or blackish-looking coats and appear as buff caterpillars free from slime, being smooth and transversely wrinkled. They go down into the ground, spin a cocoon, and from these the slugworms emerge in the following summer. The larvae feed on the upper surface of the leaves, which, in some instances, they remove entirely, leaving the Cherry leaves as skeletons. It is too late to spray this year, but early in June next year dust over the slugworms with quicklime or gaslime, the first application of which they will throw off by exuding a coating of slime, but a second application made soon after will kill them. Syringe the trees with strong soapsuds or tobacco water, or with water containing two pounds of soft soap and a peck of lime to each thirty gallons of water. If the attack is severe remove the surface soil during winter and burn or bury deeply with some quicklime or gaslime. If the soil cannot be removed insert vaporite in the soil in autumn.

CUCUMBERS DISEASED : *J. W.* The plants are suffering from a fungus causing spot disease. Spray them with a solution of liver of sulphur every alternate day, taking care to wash both sides of the leaves.

NAMES OF FRUITS : *A. B.* 4, Worcester Pearmain; 5, Cellini Pippin; 6, Manks Codlin; 12, Worcester Pearmain; 17, Lady Sudeley; 21, Worcester Pearmain; 24, Red Astrachan. The other numbers were detached from the fruit on arrival.—*R. C. Wild.* We think your Plum is Belgian Purple. The growth of this Plum is close and dense.—*F. S. N.* 1, Belle Dubois; 2, Waltham Abbey Seedling; 3, Warner's King; 4, Bramley's Seedling.—*W. R. S.* 1, Keswick Codling; 2, Beauty of Bath; 3, Jolly Beggar; 4, Duchess of Oldenburgh; 5, Kerry Pippin; 6, smashed when received.—*W. B., Dorset.* 1, Duchess of Oldenburgh; 2, Prince Bismarck; 3, Dumelow's Seedling; 4, Ecklinville.—*D. A.* 2, Duchess of Oldenburgh; 4, Worcester Pearmain. Other numbers detached.—*W. J. Richards.* Bietigheimer Red.—*T. S.* 1, Kaisha; 2, St. Ambroise; 3, Jefferson; 4, Prince Englebert; 5, Victoria; 6, Irish Peach.—*W. H.* The specimen arrived very much crushed, but we have no doubt that it is the Myrobalan Plum.

NAMES OF PLANTS : *A. W. K.* Rudbeckia laciniata flore pleno (Golden Glow), Buddleia variablis. — *T. H. C.* Sedum Telephium. — *H. G. P.* Lycium chinense, Thuya occidentalis lutea, Abies Pinsapo, Cupressus Lawsoniana Allumi.—*S. B. and Son.* Asclepias tuberosa and Liatris spicata.—*W. B. Brough.* Lathyrus sativus (native of Europe).—*M. S. A.* 1, Chimonanthus fragrans; 2, Magnolia, probably M. conspicua or one of its hybrids; 3, Asimina triloba.

PRESERVATION OF VEGETABLES : *F. G.* A recipe for the preservation of fruit and vegetables was given in our issue for August 8, page 105. The process for bottling Peas was described in the issue for July 18, page 64, and this may be employed for Beans.

PRIMULA JAPONICA : *J. K. W.* Moisture-loving Eastern Primulas, including P. japonica, P. pulverulenta, and P. Bulleyana, are all short-lived plants, which need continually renewing from seed. If your plants are dying before flowering two principal causes suggest themselves: (1) They have received a sudden check during a dry period (this is often fatal to planted-out stock which is exposed to sun, and has insufficient root system to reach down to water), or (2) they are overfed with your byre manure, which has set up a sappy growth, open to bacterial or fungous attack on the least injury to the plants by hoe or insect. Try planting in fresh loam, with no manure at all, at a level of only two or three inches above high-water level, and in half shade.

TRANSPLANTING ROSES AT END OF SEPTEMBER : *J. H. R.* Roses can be safely lifted at the end of September, and your proposed method of dealing with them is quite right. We advise you to prune the shoots to one-half their length, and also any young sappy shoots may be cut back close to their base. It will be advisable to have all foliage cut off a day or so before digging up the plants, and instead of planting them in their new positions, place their roots in a trench near a wall or fence facing north and cover them with plenty of soil. Give them a good watering, and leave the plants there until the last week in October, when you may set them out in their permanent places.

Communications Received.—A. G.—R. D.—P. C.—F. H.—Interested—J. G.—S. B. and Son—W. B. B.—J. W.—M. E. S.—J. J. T.—C. H. H.—J. H.—R. W. C.—T. P.—A. G.—C. M G.—Cardross—P. S. P.—Old Reader—W. H. D.—L. J. C.—R. H.—J. R. J.—J. B. and Co.

THE
Gardeners' Chronicle
No. 1,446.—SATURDAY, SEPTEMBER 12, 1914.

CONTENTS.

America, exotic Conifers in 190
Carnation splitting affected by the weather 190
China, Mr. Reginald Farrer's explorations in 185
Cyanamide and superphosphate, the mixing of 191
Cyclamen culture in Germany 192
Dioscorea 187
Flowers, the preservation of 193
Fruit crops, remarks on the condition of the 193
Fruit, plentiful supplies of 193
Gladiolus vitriacencis .. 192
Glasnevin Rock Garden—
  Aster batangensis .. 186
  Cheiranthus linifolius 186
Hopetoun, herbaceous flowers from 191
Lachenalias, the culture of 186
Law note—
  Bankruptcy statistics 197
Magnesia, the use of, for purifying water .. 191
Moon, the effect of, on plants 193
National Rose Society contributes 50 guineas to Queen Alexandra's Fund 190
Obituary—
  Scouler, John 197
Orchid review, the .. 191
Orchid world, the .. 191
Peach, the double-flowered 193
Pittosporum Dalli .. 192
Poinsettia pulcherrima rosea 190
Reading and Langley, annuals at 187
Rosary, the 186
Small holdings 188
Societies—
  Royal Horticultural .. 195
Streptocarpus Banksii 192
Trees as records of climate 190
Uruguay, tree-planting in 192
War items 190
Washington Botanic Garden to change its site 191
Wasps, the value of destroying queen .. 193
Week's work, the—
  Flower garden, the .. 189
  "French" garden, the 189
  Fruit under glass .. 189
  Hardy fruit garden, the 188
  Kitchen garden, the 189
  Orchid houses, the .. 188
  Plants under glass .. 189

ILLUSTRATIONS.

Aster batangensis 187
Cheiranthus linifolius 186
Poinsettia pulcherrima rosea .. .. Coloured Supplement
Streptocarpus Banksii 192
Wisley trap for the Turnip Flea Beetle, the 194

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.

[We publish below the first of a series of articles which Mr. Reginald Farrer is sending to us from the scene of his explorations. Mr. Farrer left England early this year for the purpose of collecting plants in Western China and Thibet. His descriptive, illustrated articles which will appear periodically in these pages will keep our readers informed of his experiences and adventures in the wild countries through which he is now journeying.—Eds.]

I. ON THE WAY.

NEVER till now did I properly appreciate the prices asked for Chinese plants, which have always appeared to me preposterously high. But to-day, being about halfway towards our mountains after more than a month of hard tracking, I feel that a Chinese variety of Shepherd's Purse may very properly be priced at a guinea. My precious herb prevails here, indeed, as at home, yet rouses no tender emotions. So far the going has been monotonous in the extreme, over vast and interminable plains of loëss, just beginning to be green with corn, and golden with great fragrant streaks of mustard, and now, near the villages, a rosy cloud of Peach trees in full blossom. We have at last left behind us the perilous province of Shensi, a-simmer for new rebellions and horrors of all kinds, and have come out upon the firmer ground of Mohammedan Kansu. The loëss country was very wintry still, and its most striking flower a Dicranostigma, probably the same thing which is still sometimes called Chelidonium Franchetianum. Its rosettes of glaucous and velvety foliage, nobly feathered in rounded lobes, are very handsome in the faces of the mud cliffs; and, as we passed, the tall showers of brilliant yellow Celandines were beginning to open. More mysterious, but even more charming, and less showy, was a rather rare plant, now long since left behind. From a tuft of very fine glaucous leafage, delicate and ferny, rose bare frail scapes of some 3 or 4 inches, each carrying four or five flowers in an umbel, each on a long fine pedicel. The three outer segments of pale gold were ample, and tucked into a point after the fashion of some Hypecoum, while three inner ones, very narrow and bi-lobed, formed a tube about the trifid stigma. Though wholly dissimilar, the general effect of the mass was that of a yellow Erodium. These, too, occurred by the roadsides, in varying shades of lilac, rose and purple, as were also countless little dainty Oxytropids. But of all purples the heartiest is afforded by a most delightful tufted Violet, springing in small fountains of colour along the sunlit banks. It is probably V. Patrinii, and may be no better than V. hirta on a Dorset down; yet here it has a rich fascination, so pretty and delicate and brilliant in its varying shades of purple, lavender or amethyst, twinkling above its neat tuft of narrow leaves with abundant flowers of varying amplitude and outline. There is another species, too, of the claw-leaved group, with blossoms usually of much richer violet, with a pointed lip heavily freaked with gold; both these are scentless. In damper places a great golden-flowered Potentilla runs about, and has a very close resemblance to P. ambigua; on drier banks the charming little annual Androsace Engleri achieves an almost perfect imitation of A. carnea. And now from the sere downs burst single violet goblets of an Anemone that recalls A. pulsatilla on the Devil's Dyke, but is clearly of closer kinship to A. Halleri and imperial A. sinensis. All the roadsides are carpeted with hassocky tufts of a little Iris that never seems to flower over half the country, though very occasionally one comes upon isolated stretches of it where the low, wide cushions of broadish foliage are thickly set with seed capsules. More generous is I. graminea, which abounds in the sere fine herbage of high, hot downs, and now enriches their brown expanse with here and there a dainty spidery cup of amethystine blue, suggesting a Crocus torn in strips, or I. reticulata diminished and made anaemic.

For the last three or four days our feet have been set on ways more interesting and full of promise—over the mountain passes that make the natural boundary between Kansu and Shensi. These are often clothed densely in coppice of all sorts, but mainly Lilac, shrubby Spiraeas of the Lindleyana group, Rosa rubus, Staphylea, and such-like precious garnishes of our shrubberies, here occurring in a dense woodland tangle. Here and there among these stand up rare specimens of the great Red Birch, a noble tree, stiff and angular and stalwart and gnarled, not in the least suggesting a Birch, but rather some bewitched and ancient Plane. The undergrowth of the hills, whether bare or wooded, is a mass of Anemone japonica, whose dead stems, still silvered with fluff, rise 3 feet or so among the herbage. On the ground ramps a most charming Adiantum—at one point I noticed a pale Anemone of nemorosa blood, and in another a Corydalis, with short spires of delicate sky-blue. And Asplenium trichomanes supplied a tender touch beyond the power of Shepherd's Purse.

Another pass provided different matter. It was barer than the last, and of a north-country aspect, dark with promising-looking relics of sedge and herbage, more rich in suggestion than the thin film of vegetation that clothes the loëss. On its sunnier banks the purple Anemone was breaking gloriously, and among the patches of coppice I saw a large and a small Polygonatum still lingering in dead foliage, though the new shoots were hardly visible. Towards the summit, however, a new wonder came into view, growing only on the cooler, shady side of the glen, and in a rich free soil, moist and dark, among buried screes of rock. This was a Hellebore of the Lent-Rose group—such a wonder of delicate charm that, even if it prove of "no commercial value" (in that final condemnation of the great-minded), will probably in the judgment of the discerning be held amply to justify the interest taken by the R.H.S. in my journey. So I have special hopes of seeing this lovely plant a-blow one day at Wisley. It may be imagined as a much-magnified Wood-Anemone, with three or four dainty flowers of pearly-white or pink spraying abroad from the one stem, each on a fine and dainty pedicel of its own, and with the pointed flower-segments of the fairy-like crimpled silk of Anemone nemorosa, instead of the rather fat and stolid consistency which usually prevails among the Hellebores. It has a grace, indeed, and charm of habit and colour and port which seem at present, to my enthusiastic eye, to set it apart in the race. But then I have not here for comparison the huger, stouter and showier hybrids in the group that are nowadays so freely raised and grown. Now we have descended for the moment from the mountains before sallying forth into others. In the loëss hill around, Plagiospermum sinense is abundant—a pleasant, small, thorny bush of emerald-green, strangely suggestive of a Berberis, with straight sprays laden with a fluff of white or creamy flowers. Its red berries were once mistaken for those of Crataegus pyracantha (!) and condignly neglected accordingly. *Reginald Farrer, Kansu, April 12, 1914.*

GLASNEVIN ROCK GARDEN.

ASTER BATANGENSIS.

A MICHAELMAS Daisy flowering in May and June may seem rather out of season, but nevertheless this is a useful and pleasing subject. Aster batangensis (see fig. 74) forms a compact little shrub about 1 foot high, and literally smothers itself with bloom. The flowers are of quite the same appearance as a Michaelmas Daisy, of a bright purple, quite 1½ inch across, the petals being much longer and narrower than usual in the genus. To Messrs. Bees, Ltd., we owe the introduction of this useful rock plant, and, like the majority of the newer Chinese plants, it has proved hardy at Glasnevin.

CHEIRANTHUS LINIFOLIUS.

CHEIRANTHUS linifolius (syn. Erysimum linifolium—see fig. 73) is a native of Spain, and was collected by Mr. Clarence Elliott, who kindly presented some seed to the Glasnevin Botanic Gardens. Towards the end of February, 1913, seed was sown in a pan, and the seedlings transplanted to the rockery in May flowered throughout October and November, and ripened some seed which has germinated this spring. The plants came through the winter untouched by frost, and started to flower early in May, whilst in June they formed a spreading mass a yard across and about a foot to 18 inches high, and were covered with lilac-coloured flowers. At the present time (September) the plants are quite bright and attractive, although not flowering so freely as in May, yet they give a touch of colour in the rockery. The lilac colour of the flowers is most welcome, for there are very few free-growing rockery plants having this pleasing tone.

The flowers are borne on racemes like a wallflower on leafy stems. The individual flowers measure half an inch across. The leaves are linear with a sinuate margin, in length 3 inches by a quarter of an inch across.

This Erysimum promises to make a first-rate plant for the rockery. It grows well in any ordinary, well-drained soil, and seems to enjoy full sun. Cuttings strike easily, and fresh seed germinates readily.

Some journals have stated that it is likely to be a biennial, but here it promises to be perennial, and in Willkomm's *Flora Hispanicae*, where a description is given, it is said to be perennial. *L. N. Ball.*

CULTURAL NOTE.

LACHENALIAS.

LACHENALIA bulbs should be potted in July or August in a compost such as is suitable for Freesias. I usually pot both these plants at the same time, but Lachenalias are less amenable to forcing than Freesias. The plants may be grown in five- or six-inch pots, in hanging baskets and boxes, the last-named system for producing flowers for cutting.

After potting they should be removed to a cold frame, kept close, and the pots covered with cocoanut fibre to retain moisture. Unless the soil be dry, watering will not be necessary until after the foliage appears, when the covering should be removed and air admitted on all favourable occasions. Batches may be brought on as required in a greenhouse temperature, but any attempt at hard forcing will end in failure.

The plants may be had in flower from mid-January onwards. When the pots are full of roots feeding is advisable, liquid manure, if obtainable, being very suitable, though almost any good fertiliser will be beneficial, as Lachenalias are gross feeders. Feeding should be continued after the flowering period is past, until growth is completed, and the plants show signs of resting, when they should be placed on a shelf in full sunlight, and water gradually withheld until the bulbs are perfectly dry, in which condition they should remain until the time comes for them to be repotted.

They can be flowered in the same pots a second year, but the bulbs usually become crowded, and, as a consequence, the flowers, though numerous, are weaker. For hanging baskets the bulbs can be either placed in their permanent position when dormant, or they may be transferred from boxes when growth is well advanced. The latter is perhaps the better method, as more even plants can be selected. If grown in a moist atmosphere and cool temperature, few plants are less liable to attacks of insect pests, and a light fumigation is sufficient to rid them of any such pests. Of varieties, perhaps tricolor, red, green, and yellow, is the best known, but the showy Nelsonii stands pre-eminent in my opinion on account of its beautiful clear-yellow colour, its extreme floriferousness, and the prolific increase in the size and number of its bulbs. Another fine variety, though rarely seen, partly because it increases very slowly, is aurea, a lovely deep orange colour, very striking indeed when well grown; luteola is a light and pretty form of tricolour, green being its predominating colour; pendula is a larger-flowered variety; while orchioides is more quaint than useful, a remark that also applies to glaucina, which has flowers of a curious glaucous hue. *F. A. Edwards, Upton Gardens, Alresford, Hampshire.*

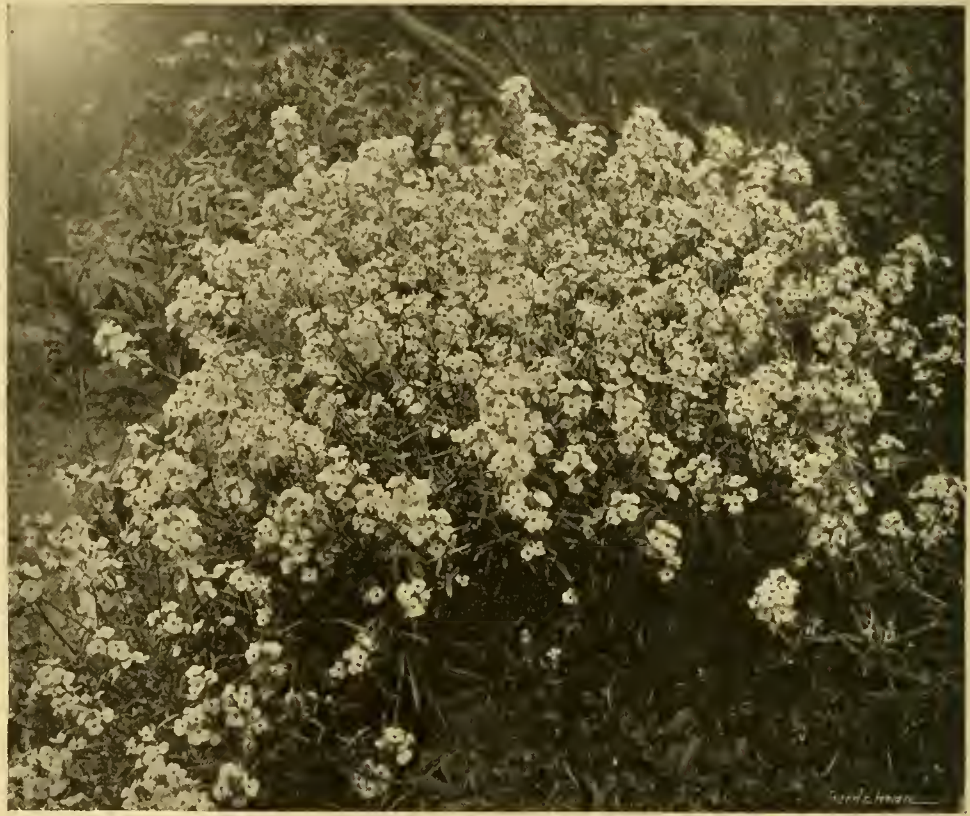


FIG. 73.—CHEIRANTHUS LINIFOLIUS IN THE GLASNEVIN ROCK GARDEN.

THE ROSARY.

TIME FOR RE-POTTING.

EARLY September is a suitable time for re-potting any Roses intended for blooming in April and May and that have filled their pots with roots; all others should not be shifted. Plants desired for earlier forcing should have been re-potted in June, and if the work was not done then it will be desirable to top-dress them and postpone the re-potting until another season.

I do not favour a large shift. It is better to confine the roots rather than to give them too much space, nor need I dwell on the fact that clean pots and crocks are essential. The compost may consist of good fibrous loam, 2 parts; well-decayed manure from an old frame, 1 part; and about a 6-inch pot full of bone meal to every 2 bushels of compost. If the loam is inclined to be heavy a little sharp sand should be added.

One of the most successful growers of pot Roses prepares his compost a year in advance. He takes 5 parts of yellow loam of a fibrous nature to one part horse and cow manure and some burnt earth. The manure and loam are placed in a large heap in layers, sandwich fashion, and when I say about 500 loads of loam are used it will be at once seen that there is no fear of the heap becoming too dry. The average gardener will not need a very large stack of compost, but he will be well repaid if he prepares a small stack on these lines. I once knew a very successful pot Rose grower, who used to win numerous prizes at the shows in the early sixties, and his plan was to make a stack of fibrous loam, with night soil placed in between layers of the loam, fully 12 months before using the compost.

The plants that are about to be re-potted have of course been standing outside for some weeks now, and they have been watered as required. It is well to shake them moderately free of the old soil, and in order to do this carefully it is best to turn out the plant, and after removing the crocks, gently prod the ball of earth with a pointed stick. Then give the plant a shake, when a quantity of the old soil will fall away without damaging the small, fibrous roots. Having made the pot ready with a liberal amount of crocks, which may consist of oyster shells if available, a handful or two of the lumpy portions of the compost should be placed on the crocks and rammed down with the rammer. The plant is then set in the pit, and the compost shovelled to about half full and well rammed in, then the remainder filled in and also made firm. Roses prefer good firm potting, and the pots should be filled to within about 1 inch from the top. After re-potting stand the plants in a position out-of-doors that is well exposed to the sun, and see that the pots are placed on a bed of ashes. Should no rain fall in the course of a day or two the plants should receive a watering. I prefer to keep plants outdoors as late in October as possible, but if sharp frosts threaten they should be removed to a cold house.

The top-dressing of plants that are not to be potted may also be carried out at the present time. Turn out the plants and clear the crocks of any soil accumulations. Then replace the ball and remove 2 or 3 inches of surface soil. Spread on a good handful of Thomson's or Clay's manure, then cover with good fibrous loam with a little sand added. The quantity of fertiliser mentioned would be for plants in 8 or 10-inch pots. Larger or smaller plants should receive a larger or smaller quantity in proportion.

PLANTING ROSES UNDER GLASS.

The present is a good time to plant out climbing Roses under glass in well prepared borders or tubs. It is the best economy to purchase extra sized pot plants for this purpose, and as most of the large Rose-growers stock these there should be no difficulty in obtaining the desired varieties. Some of the newer climbing sports of popular Roses should find a place in every large establishment. I refer to such climbers as Marquise de Sinety, Paul Lédé, Clara Watson, and Souvenir de Pierre Notting, while Madame Pierre Cochet and Mélanie Soupert are all splendid and make prodigious growths, being admirably suited for walls or roofs of lofty conservatories or greenhouses. They yield blooms as a rule superior to the types from which they sported, and are thus of great value. Of course the older climbing sorts are still good, such as Climbing Lady Ashtown, Niphetos, Mrs. W. J. Grant, Richmond, and Liberty, and no one should miss planting Florence Veitch, which is to be recommended, both for colour and fragrance. In the outdoor Rose garden Ramblers will need attention, if it has not already been given. A good proportion of the old growths should be cut clean out, and the young rods carefully trained in. Whilst the plants yield young rods liberally it is a bad policy to harbour much old wood. Where new rods only started late in the season, more discrimination is necessary, as some of these may be too pithy to be of service next season, in which case we must retain some old wood. Weeping Roses should be well thinned now of old wood. This encourages new growths immensely, and there is still time for these to make a good progress. The Roses in the beds and borders should have all the old trusses of bloom removed ere they form seed pods, for this will prolong the autumnal blooming. *Experience.*

NURSERY NOTES.

ANNUALS AT READING AND LANGLEY.

Although it has not been an ideal season for annuals raised in the open, there is such a gorgeous display of these flowers in Messrs. Sutton and Sons' trial grounds at Reading and at Langley, that even the fleeting glimpse which is obtained from the windows of express railway trains leaves a vivid impression. At Langley, which has the richest soil, it is the deep orange-yellows and the richest pinks that most impress the sight, whilst the grounds near the railway at Reading give the impression of a greater variety and complete harmony. This is probably due to the greater extent of the Reading grounds, because an inspection showed that there is a great variety of annuals in both trial grounds, and that no particular colours predominate.

Three dominant impressions remain from my recent visit to Messrs. Suttons and Sons' grounds. These are that nothing is left to chance; that the trials are genuine trials; and that a large number of annuals might be used in the rock garden To take the last first, I was impressed over and over again by the many distinct kinds which, by their habit, might not only without incongruity but with advantage be included amongst the perennial Alpines in the rock garden, where they would increase its beauty and attractions; especially at this season, when the great majority of rock plants are out of bloom. Of the dwarf annuals suitable for this purpose, mention may be made of Abronia umbellata, a lovely trailing plant, which freely bears rose-coloured Verbena-like flowers; Alyssum saxatile, Anagallis, both the blue and scarlet; Brachycome iberidifolia, a rather taller species, which yields blue, white, and rose flowers; Chamaepence Casabonae (although this is a perennial it is grown in gardens as an annual, and for the beauty of its tuft of foliage); Candytuft, Dimorphotheca hybrids; Eschscholtzias, especially the varieties which bear rose and orange-coloured flowers; Gypsophila muralis, a dainty species, producing rose-coloured blooms; Linum sibiricum varieties; Portulacas, single and double, in various colours; Sanvitalia procumbens, an uncommon plant, which may be popularly described as being a very tiny, prostrate Sunflower; Saponaria calabrica, pink star-like flowers; S. ocymoides, an elegant trailing species, bearing rose-coloured blossoms; and the tiny Sedum coerulum. This is far from being an exhaustive list, but it will suffice to show the great possibilities of annuals for rock gardening, where they would be especially valuable during the first two or three seasons of the rock garden's existence, where a delightful display could be made at a trifling cost until the more expensive permanent plants had become established and of full size.

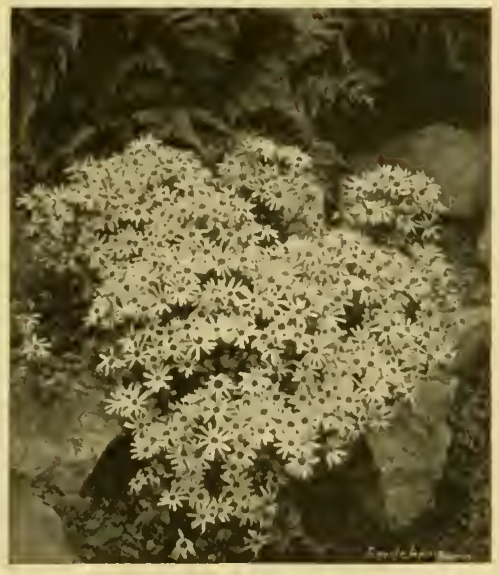


Fig. 74.—Aster batangensis at Glasnevin.
(See p. 186.)

The genuineness of the Sutton trials is plainly seen by the "rogues," which are allowed to remain in the beds, so that their relative proportions and character may be noted and recorded. This, combined with the many evidences of careful detail and thought, as, for example, the meat-safe-like protectors, which are dotted over the ground at Langley, enclosing selected plants, to ensure against promiscuous fertilisation, show plainly that nothing is left to chance, but that true results are desired and obtained.

The chief floral novelty of this season is undoubtedly the Red, or, more appropriately, the Gaillardia Sunflower, which is now well known to visitors at the R.H.S. shows at Vincent Square. This cross between Helianthus annuus and the wild Sunflower of America (H. lenticularis) is of the true H. annuus type, but is not so tall, and it comes remarkably true from seed. Clarkia elegans Purple Prince, Coreopsis Lemon Queen, Dimorphotheca aurantiaca hybrids, Lavatera Loveliness, Nigella White Miss Jekyll, and Aster Pink Ray are other novelties which are all improvements on the standard varieties. The Dimorphotheca hybrids are especially charming, very many of the new shades of colour are really enchanting, and before long we may expect to see as great a variety as in the Gerberas, to which the flowers have such a passing likeness, that with a little licence a popular name of "Hardy Gerberas" might be given to them. Besides being of a new shade of colour, the Coreopsis Lemon Queen possesses exceedingly graceful foliage. Lavatera Loveliness is of richer colour, is more compact and floriferous than L. rosea splendens, and, like that well-known annual, is invaluable as a cut flower for filling large vases. Amongst the very many Nasturtiums that are grown at Reading, "Ivy-leaved Golden Queen" at once attracts attention; it is evidently a cross between the old favourite Canary Creeper and a tall yellow variety; the vigour of the tall yellow is retained, the flowers are of large size, and in their serrated margins plainly show the canariense parentage. This will be a valuable trailing annual for tubs and window boxes. To those who are acquainted with only the yellow and orange coloured varieties of Eschscholtzia, a visit to Reading, where may be seen such sorts as Ruby King, Frilled Pink, Rosy Queen, and Dainty Queen, would indicate the great advance and future possibilities in this genus.

No account of Messrs. Sutton's annuals would be complete without mention of their Antirrhinums, which, although perennials, are generally treated as annuals. The work which the firm has done with this plant needs no mention here, it is common knowledge that we owe much of the enormous improvement which has been effected during the last 20 or so of years to their tireless energy and skill. Never content, Messrs. Sutton have of late laid themselves out to evolve a really good dwarf pink strain, and they have now achieved it in Delicate Pink, which is an especially charming plant. Although in the tall and intermediate strains there are many varieties of good pink shades, hitherto there has been none in the Tom Thumb section which has not had a deal of magenta in the colour composition of the flowers. These dwarf Antirrhinums, which form tufts of foliage averaging 6 inches in height, and become studded with compact spikes of beautiful flowers, are most valuable for summer bedding purposes.

Did space permit, much might be written of the many beautiful and valuable hardy annuals which are known to very few gardeners. Of such are Oxalis Cloth of Gold, a true annual, bearing yellow flowers on plants 9 inches high; Hibiscus africanus major, interesting plants about 2 feet high, well furnished with primrose-yellow flowers, which have deep violet centres; the Sanvitalia umbellata, already noted as being a suitable annual for the rock garden; the improved Hawkweeds, which bear uncommon pink, white, yellow, or silvery white flowers; Cacalia coccinea, which has heads of vivid orange-scarlet flowers on long stems; Callirhoë digitata, a free-flowering crimson species, are only a few of the many kinds grown at Reading and Langley. *A. C. B.*

Dioscorea.—The *Journal* of the Asiatic Society of Bengal, new series, vol. x., No. 1, contains a synopsis of the species of Dioscorea of the Old World, except the African. This synopsis is the forerunner of a detailed, fully-illustrated monograph in preparation, which will appear in the *Annals of the Royal Botanic Gardens, Calcutta.* It contains 107 species, including a considerable number previously undescribed. Dioscorea sativa is definitely reduced to D. bulbifera, of which eight varieties are distinguished. The distribution of the genus is pantropical, with a few outliers in both north and south temperate regions, including the remotely isolated D. pyrenaica. The genus is numerously represented in Africa, Asia, and America, and some account of the African species will be found in the *Gardeners' Chronicle* for July 12, 1913.

SMALL HOLDINGS.

Sir Sydney Olivier, President of the Board of Agriculture, has circulated the following letter to the County Councils :—

I am directed by the Board of Agriculture and Fisheries to say that they have had under consideration the arrangements made in England and Wales for providing technical instruction in agriculture for small holders.

It appears to them that, notwithstanding advances recently made, there is still much room for enabling the small holder to improve his condition by assisting him with suitable instruction, so as to enable him to increase the production of his holding and to market his produce satisfactorily. In the Board's view it is desirable that continuous efforts should be made to effect these objects through the Education and Small Holdings Committees, who are charged with the administration of laws enacted for the purpose of promoting the welfare of rural workers.

Out of a total of 435,700 holdings above one acre in England and Wales 292,400 are under 50 acres, while in addition there are over 118,000 allotments under one acre belonging to local authorities, apart from a large number of allotments let by private landowners. Judged by numbers alone it is obvious that there is an extensive field of work for the teacher, while in addition it must be remembered that of all classes of the agricultural population the small holder and rural labourer have the least opportunity of obtaining instruction and skilled advice and are consequently most in need of assistance.

The Board, therefore, invite Education Committees, in arranging their schemes of Agricultural Education, to give special consideration to the needs of small holders and allotment holders, and with this object in view they would suggest that the Small Holdings Committee and the County Land Agent should be asked to indicate districts where instruction might suitably be given, and also the type of instruction most needed.

Small holders and allotment holders are usually to be found in groups or colonies, and these would afford a convenient centre for organised day and evening classes and for courses of instruction in such subjects as Horticulture, Poultry-keeping and Dairying. A small holding colony is also a most appropriate centre for demonstration holdings or plots illustrative of the best methods of growing and manuring market-garden crops, fruit, etc. Demonstration holdings or plots can also be used to introduce to the notice of small holders crops not usually cultivated by them, but which have proved successful elsewhere. When well managed and properly supervised by the instructors they are likely to be of greater use in educating cottagers and small holders than instruction of the class-room type. Especially is this the case where the instructor visits the land of the small holder and discusses the application to it of lessons taught by the demonstration plots.

In making the above general observations the Board recognise that the conditions of each county vary, but they think it would serve a useful purpose if the County Organiser or the Director of Education could be instructed to consult the County Land Agent and to report how far the existing facilities in the county meet the needs of small occupiers and what steps can be taken to extend them for the benefit of all sections of the labouring classes.

The Board desire me to say in this connection that they think it will probably be found that an opening exists in most counties for the appointment of an officer, acting under the County Organiser, who could devote himself especially, and in some cases entirely, to the needs of small holders and allotment holders.

The appointment of a Small Holdings' Instructor would ensure that the small holders in the county, who might otherwise be neglected, were benefited by the educational work of the local authority. Being in constant touch with the small holding community, he would be able to make a special study of their needs and of the best way of advancing their interests; he would thus supplement and further the work of the Small Holdings Committee by helping their tenants to cultivate their land in the best way possible. This instructor should not, however, confine his attention to the statutory small holders. His services should be equally available to all small occupiers.

Without necessarily being a specialist in any particular branch, he should possess such a general knowledge of market gardening or of agriculture as would enable him to furnish small holders with advice as to the selection of their crops and as to the best means of cultivating and marketing them. With the latter object in view he would endeavour to promote and organise co-operation, both for purchase and sale, amongst the small holders of the district.

It will be seen that the suggestion of the Board amounts in effect to the appointment of an assistant to the Agricultural Organiser, who would devote himself more especially to the needs of small growers, and spend much of his time visiting their holdings, discussing their difficulties, and securing for them the full benefits of the educational facilities provided by the Authority.

The Board recognise the great efforts that have recently been made in many counties to further the interests of agricultural education, but they are convinced that further provision is required for the smaller agriculturists, and in view of the substantial grants which the Farm Institute Fund provides in aid of additional expenditure, they hope that your Authority will give their careful consideration to the above suggestion and will co-operate with them in endeavouring to promote the well-being and prosperity of the rural population.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Masdevallia.—When the Odontoglossums have been given attention in regard to re-potting and top-dressing the cultivator may commence to overhaul the Masdevallias. Such species, for instance, as M. Veitchii, M. coccinea (Harryana), M. ignea, M. Davisii, M. Shuttleworthii, M. polysticta, M. leontoglossa, and most of the hybrids that require more root room, or, as in the case of large specimen plants, have become bare in the centre from loss of foliage, should be re-potted as soon as the outdoor conditions are favourable, which means that the weather out-of-doors should be somewhat moist and cool. If they were potted during hot, dry weather, such as we are now experiencing, the plants would be liable to lose some of their foliage. Masdevallias are not deep-rooting plants, and for this reason the receptacles should be three-parts filled with drainage material. The rooting compost may consist of good fibrous peat, broken Oak or Beech leaves, and chopped Sphagnum-moss in equal proportions, with sufficient sand and broken crocks intermixed to render the compost porous. This compost should be made firm and slightly mounded to the centre. When the plants have been potted let them be watered with rain water and placed in a position where they will be shaded from strong sunlight until the roots again become active. Maintain a moist atmosphere and spray the plants overhead daily during dry weather.

Seedling Cattleyas.—Any seedling Cattleyas or seedlings of allied genera, more especially any specimens that have reached the flowering stage, will now be in course of maturing their growth. Such plants should be exposed to the sunlight except during the hottest portion of the day, when a slight shade may be necessary to prevent disfigurement to the foliage. Any plants that are not producing flower seeds and that require more root room should be re-potted as soon as the new growths commence to produce roots, but any that are showing flower shoots must be permitted to remain undisturbed until the flowering is past. Plants that are re-potted will need some shade from bright sunshine until they become re-established.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Kent.

Peaches.—In this district the crops of Peaches and Nectarines are unusually heavy, and the weather has been so hot and sunny that the quality of the fruits is superior to that usually obtained from outdoor culture. When fruits of such perishable nature as Peaches are so plentiful extra care is needed to prevent waste. The trees should be examined every morning in order that all fruits may be gathered that are in a suitable condition. Any that are damaged in any degree should be put on one side at once so that they may be used in the kitchen, and misshapen or undersized fruits can be taken off before they are quite ripe and used for bottling. Peaches should be gathered just before they are fully ripe and placed in boxes or drawers in the fruit room, where the ripening process will quickly finish, and the fruits can then be selected in sizes for packing or served for home consumption, as the case may be. Later varieties should have all the fruits thoroughly exposed to the sun by tying back any shoots that serve to screen them and pinching out the lateral growths. A few leaves may even be picked off round the fruits if this is found necessary. Syringe the trees regularly on warm afternoons to prevent red spider, but discontinue the syringing of particular trees as soon as the fruits commence to ripen. Take care that the trees do not suffer from drought, bearing in mind that trees planted close to high walls and in warm situations are apt to become drier at the roots than is generally imagined. Whenever water is given let the application be thorough so that the soil wherever the roots permeate may be moistened; small dribbles at frequent intervals are to be avoided. Late ripening varieties bearing liberal crops may be given dressings of artificial manure immediately before applying water, alternating this with weak liquid manure water from the farm. Amongst the best late varieties are Bellegarde, Late Admirable, Nectarine Peach, Princess of Wales, Sea-Eagle and Thomas Rivers.

Nectarines.—Nectarines, of course, require the same treatment as Peaches. Of the later varieties of Nectarines, Pineapple, Chaucer, Milton, Newton, Spencer and Victoria are to be recommended. Any Nectarine or Peach trees which are making excessive growth should be marked for root-pruning next month. By carrying out this operation in good time the roots will be able to get a good hold of the new soil before winter.

Pears.—The latest varieties are now swelling fast, and if extra fine fruits are required for exhibition purposes the best examples of the larger varieties should be supported by tying pieces of matting round the stem of the fruit and fastening it to the wire or wood of the tree. Such varieties as Souvenir du Congrès and Pitmaston Duchess are apt to drop their fruits too soon if this precaution is not taken. Expose all the fruits as much as possible to the sun in order that they may develop fine colour, which is an important point at the exhibitions. Take every means to prevent the trees suffering from want of water at the roots or the swelling of the fruit will be hindered. In some gardens it will be necessary to place the best specimens of Pears in bags of paper or wasp-proof netting. These bags can be procured from the sundriesman and they provide satisfactory protection from the wasps, but the fruits that are covered up in this way are apt to be somewhat deficient in colour.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Parsley.—In order to provide against damage to out-door Parsley during the winter sufficient plants to maintain a supply should be lifted and planted in a frost-proof frame or pit. Parsley that was transplanted in May or June is suitable for this purpose, as every plant can then be lifted with a large ball of soil attached to the roots, which will prevent the leaves turning yellow after the operation. One good soaking of water will probably be enough to carry the plants through the winter. Root-maggot has been prevalent amongst Parsley plants this season, and care should be taken to reject any that are suffering from this pest.

Vegetable Marrow.—This vegetable is very susceptible to injury by early frosts, and a covering of mats is not sufficient to protect the plants. It is advisable to cut all mature fruits and store them in a perfectly dry place if the atmosphere indicates that a frost may be expected. Ripe marrows are very acceptable in winter, either cooked alone or with Apples, so that none of the fruit need be wasted as has often been the case in other years.

Herbs.—Certain herbs, such as Thyme, Lemon Thyme and Sage, require to be renewed by means of cuttings or by seed, and the present time is very suitable to propagate fresh stock by means of cuttings. They root quite freely from side shoots 3 to 6 inches in length. I give them the protection of a cold frame, and the cuttings are pricked into a shallow bed of soil at a few inches apart. All are ready to transplant in the following March.

Celery.—Take advantage of the dry weather to earth-up another batch of Celery, applying 6 to 9 inches of soil. If a crop of Cauliflowers or Kidney Beans is being taken off the ridges, the soil may be cut straight down so as not to damage the roots of these and thus may be secured sufficient material for the operation. It saves labour and keeps the plants clean if a strand of matting is run round each plant before applying the earth, at the same time removing all superfluous growths. Pulverise the soil thoroughly before earthing it up and firm it well about the plants.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Souvenir de la Malmaison Carnations.—The layers of "Malmaison" Carnations that were made as advised in a previous calendar will now be producing roots. Care must be taken to ensure that the plants get plenty of ventilation. A week or so previous to potting up the rooted layers they should be severed from the parent plant by means of a sharp knife. Suitable pots for these layers will be those 3 or 4 inches in diameter, and for the compost turfy loam three parts, with sand, mortar, rubble and decayed manure together forming one part, will be suitable. But in the event of the loam being very heavy the proportions of mortar, rubble and sand may be increased. Lift the layers carefully with a hand fork and pot them moderately firmly. Remove the young plants to a frame placed over a coal-ash base. Keep the frame closed and shade the plants from bright sunshine for a time. Assuming that the compost is fairly moist at the time of potting, no root-water will be necessary for a week or so, but the plants may be sprayed overhead twice a day until they become established, when the shading may be removed and liberal ventilation allowed. One-year-old plants that have been potted into 8 and 9 inch pots for flowering next year should have the weak shoots staked out securely. Employ abundant ventilation and afford water rather sparingly throughout the autumn and winter, as the plants will be in a more or less resting condition.

Early-Flowering Chrysanthemums.—Any of these plants that have set their flower-buds may be lifted from the open ground and potted up for use in the conservatory before the ordinary pot varieties come into flower. Choose a dull day for the operation, and having got pots and material ready, lift the plants carefully with a spade, keeping as much soil attached to the roots as possible. Pot moderately firmly and avoid damaging the roots. Place the plants in a shady position out-of-doors where they will be sheltered from the wind. Give them a good soaking of water and spray them every day until they have recovered from the check.

Primula.—The most forward plants of Primula chinensis may be removed to the greenhouse. They require plenty of air, but the night temperature should not fall below 55°. Feed the plants with a weak stimulant and damp the paths occasionally.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Open-air Crops.—Take advantage of the first rainfall to plant the main batch of spring Cabbage, setting the plants fairly deep and not more than 10 to 12 inches apart. Any weakly ones may be left in the nursery beds for another fortnight. Celery requires ample watering this month. Earth up the first batch of Red Celery to follow the batch grown on the old manure beds. If the growth of the last lot is not sufficiently luxurious, it may receive a dressing of superphosphate, though it is preferable to avoid the use of chemicals in cases where plants have to stand through the winter. Remove the bottom leaves of the Celeriac and cut the fibrous rootlets growing round the main roots with the blade of a long knife. As soon as sufficient frames are at liberty use them to shelter the late batch of Beans. Whenever damp or cold weather threatens, lights should be placed on the frames, employing ample ventilation by day and night. Tomatos have again been successful in the open and are bearing well. To obtain fruits with a rich colour it is necessary to pick them ripe and pack them in boxes, which are kept closed in a dry shed until they are required. Remove all foliage growth to facilitate the ripening. At the end of the present month the best bearing plants may be cut close to the ground, to be fixed in a greenhouse by tying them to the wires so as to ensure a continuous supply of sound fruits until well into November. The crop of winter Lettuce has been set out in frames, 12 dozens per frame for the variety Little Gott, and 9 to 10 dozens for the White Passion variety. Lettuce Little Gott may also be set 7 or 8 inches apart in greenhouses or on a stage bearing a layer of 4 or 5 inches of very rich soil, providing there is plenty of light and ventilation.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Lavender and Rosemary.—This is the best season for taking cuttings of Lavender and Rosemary, and it is desirable to have always a good stock of two-year-old plants in the reserve garden from which to replace exhausted stocks of six or seven years old. The flowers produced by the younger plants are vastly superior; moreover, branches in older plants canker and die away, leaving ugly gaps in the beds. Select short, stumpy cuttings from the upper and exposed parts of the plants, slipping or "spauling" them off and smoothing the jagged ends with a sharp knife. Insert the cuttings in a cold frame in sandy soil, giving them some watering to settle the soil and keeping the frame closed. It is important in taking the cuttings to select them from plants bearing the true grey foliage and large trusses of strongly-scented flowers. Santolina incana and Southern-wood (Artemisia Abrotanum) require similar treatment, and should find places in every garden.

Pentstemon, Calceolaria and Other Plants.—Pentstemons and other summer-flowering plants, including Calceolarias, Marguerite Mrs. F. Sander and Veronicas, should have a set of cold frames prepared for them. Into these frames dibble the cuttings into sandy soil, placed on a hard base, that the roots cannot enter. Spread a thin layer of sand on the surface before inserting the cuttings, use a blunt dibber, and take care that each cutting reaches the bottom of the hole made by the dibber. If plants were planted in the reserve ground, as advised previously, and the flowers have been pinched off them, a bountiful supply of healthy cuttings will be forthcoming, and good, firm cuttings constitute one of the best assurances of ultimate success. All the plants enumerated require similar treatment, and it will be economical if this fact is remembered and they are placed together.

Eremurus robustus and other Species.—Now is the time to divide plants of Eremurus. Their claw-like roots will separate quite easily, but they must not be kept out of the ground longer than is necessary. Replant them in holding sandy loam, and do not use any fresh manure. The plants love rich, partially decomposed leaf-mould. A large group planted with a background of evergreen shrubs is very effective in June.

Note-taking.—Continue to make notes of all new plants that have been tried out-of-doors this season for the first time, taking care to propagate early such as will be required for next year.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Vines.—Late Grapes which are required to hang on the vines during the winter will not keep well unless they are quite ripe by the end of this month. Ventilate the houses early in the day and remove any decaying or mouldy berries as soon as they are seen. Keep the borders in a moderately moist condition, and when it becomes necessary to water apply it to the border early in the day. Restrict all lateral growths, but allow the principal spur growths to remain intact for the present, taking every care to preserve the leaves on the spurs nearest to the main rod so that the buds may be thoroughly matured for the production of next season's crop of fruit.

Melons.—It requires more than usual care if the late crops are to be ripened satisfactorily. For the production of well-flavoured fruit there must be no lack of fire heat, with an abundance of air on all favourable occasions. The night temperature should never be lower than 68°, and 10° higher during the day is beneficial. Afford water sparingly to the roots, and if the bed is firm and well mulched a good watering once a week will be ample. Above all, keep the plants clean, and immediately green or black fly is detected dust the affected leaves with Tobacco powder. If the pest continues to spread fumigate with Tobacco or its equivalent, provided the fruit is not nearing the ripening stage. Melons in dung pits or frames are now nearly over, but where any remain take care to prevent damp by admitting air freely during the day and a little during the night. In most cases water will not be necessary, but where it is required it should be given during the morning of a bright, sunny day. Cut the fruits a day or two before they are ripe; they will then keep a fortnight or three weeks if stored in a cool room. In the event of red spider appearing it will be safer at this time of the year to keep it in check by dusting a little sulphur over the infected leaves rather than by affording water too liberally.

Fruiting Plants.—Those plants that were potted last month are now making rapid progress and require every encouragement. Maintain a mild bottom heat and supply the plants liberally with water and liquid manure at intervals during their growing season—that is, from the time they begin to grow vigorously until the fruit is about half-grown. At this stage moisture should be reduced in quantity as the fruit attains maturity. Water the plants about the middle of the day and do not allow the water to reach the heart of the plants. Any overhead moisture that is required should be given with a syringe or through the fine rose of a watering-can. The temperature should be kept at about 65° to 70°, allowing an advance of 5° or 10° in the middle of the day caused by the sun heat. The aim of the grower during the next six months should be to maintain the air buoyant, thus preventing a damp or humid atmosphere.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, SEPTEMBER 16—
Nat. Dahlia Soc. Sh. at Crystal Palace (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 57.3.

ACTUAL TEMPERATURES:—

LONDON, *Wednesday*, September 9: Max., 77°; Min., 65°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, September 10 (10 a.m.); Bar. 29.4; Temp. 69°. Weather—Fair.

PROVINCES, *Wednesday*, September 9: Max., 78° Southend; Min., 58° Worthing.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—
Bulbs at Stevens's Rooms, 38, King Street, Covent Garden, at 12.30.

WEDNESDAY—
Bulbs in cases as received, Palms and Plants, and Bulbs in variety, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 3.

Trees as Records of Climate.

It is a well-known fact that in certain countries the age of a tree may be estimated by the number of annual rings as seen in a cross-section of its trunk. If the climate of a country is such that in the course of a year there is one growing and one resting season the estimate is trustworthy, but if other conditions of climate obtain it is not. The immediate reason why the estimate is trustworthy is also well known. Spring wood has thin walls and large cavities, autumn wood has thick walls and small cavities, and hence the contrast between autumn and spring wood is clear. Attempts have been made recently to utilise these facts for the purpose of ascertaining whether the world's climate has undergone any definite changes during what may be called the trees' historical period. The service which trees might render in this respect is evident, for the big trees of California (Sequoia Washingtoniana) are of great age, some, as judged by their annual rings, being upwards of 3,000 years old. Hence if it could be shown that the amount of growth in any given year is proportional to the meteorological conditions which obtain in that year, it should be possible to reconstruct, of course in rough and general terms, the meteorological chart of the years during the past thirty centuries.

That the size of the annual ring is definitely related with water supply, and hence with rainfall, is indicated by the results obtained by Professor Douglass, of the University of Arizona. By measuring accurately the size of the annual rings of a large number of trees, and by comparing their measurements year by year with the amount of the recorded rainfall for these years, he was able to show that there is a marked agreement between rainfall and growth; in wetter years the rings are larger, and in drier years they are smaller. Thus the size of an annual ring may, with proper precautions, be taken as an index of the relative wetness or dryness of the year in which it was formed. Mr. Ellsworth Huntington (see *Geographical Journal*, London, 1912), has applied this method of historical investigation on a large scale. He has taken as index of climate the size of the annual rings of some 450 trees of Sequoia Washingtoniana ranging in age from 250 to 3,150 years. Needless to say, it is not sufficient for this end only to measure the annual rings. The proper rate of growth must first be determined by comparing the rings formed in a given year by trees of different ages. Comparisons of this kind show, as is to be expected, that it is only after a tree has passed extreme youth that it makes a maximum of growth, and that after a period of maximum growth—which in Sequoia Washingtoniana ends at about 300 years—the rate begins to decline. Making allowance for this age-relation Mr. Huntington finds that during the last 30 centuries the climate of North America has undergone remarkable rhythms or pulsations. The pulses last each for centuries. Dry period succeeds wet, and wet is succeeded by dry. He finds, moreover, that the moist periods of long ago were moister than are those of recent date. In support of these conclusions he shows that the curve of climate, with its crests and furrows obtained by a study of the annual rings of Sequoia, coincides remarkably closely with that arrived at by entirely different methods.

Coloured Plate.— Our supplementary illustration depicts a variety of the well-known garden plant Poinsettia pulcherrima, in which the bracts show a distinct rosy-pink shade instead of the vermilion of the type. Messrs. MAY AND SONS, Edmonton, exhibited the novelty under the varietal name of rosea at a meeting of the Royal Horticultural Society in December last. Two other varieties are recorded of this species, one with creamy-white bracts, another, plenissima, with double series of bracts. This latter variety formed the subject of a page illustration in *Gardeners' Chronicle*, January 1, 1876, p. 17. Poinsettia pulcherrima is a native of Mexico, and has been cultivated in British hothouses since 1834. Although the plant is known universally in gardens as Poinsettia, it rightly belongs to the genus Euphorbia.

Weather and Carnation-Splitting.— The general opinion that the splitting of the calyx of Carnations is more marked when the weather is cloudy receives some support from observations made at the Horticultural Experiment Station, University of Illinois (see *Gardening*, August 15, 1914). During the last three months of 1913, a period of bright weather extending from October 13 to November 10 was followed by cloudy weather, which lasted until December 8. The percentage of "splits" during the period October 27 till December 1 averaged less than 5; whereas during the following five weeks the average rose to nearly 25.

Exotic Conifers in America.— Of exotic Conifers usually planted in this country it is found that in the Arnold Arboretum the life of the Scotch Pine (Pinus sylvestris) is usually not more than thirty or forty years. The tree grows very rapidly, it is perfectly hardy, and, beginning to produce seeds when only a few years old, self-sown seedlings often appear in considerable quantities. The so-called Norway Spruce (Picea Abies or excelsa) is another hardy, fast-growing European tree which in America generally begins to die at the top when forty or fifty years old and is not a success at the Arboretum. Experiments are being made with seeds of these trees collected from wild trees in Norway and Sweden in the hope that plants raised from these seeds will be more permanent there than European nursery stock which has usually been planted in America.

War Items: National Rose Society.— The Autumn Show of the National Rose Society having been abandoned for this year, the Council of the Society, at its meeting held on the 8th inst., unanimously decided to send a donation of fifty guineas to the Relief Fund which is being raised by the Society's Royal Patroness, Queen Alexandra. *Charles E. Shea, President, National Rose Society, September 9.*

—— At Chard on August 29 a Patriotic Flower, Fruit and Vegetable Show was held in the Corn Exchange in aid of the Prince of Wales's Fund, when a sum of £40 was raised for it. The idea originated with Messrs. JARMAN AND Co., who supplied all the blooms gratis. These had been grown for show purposes, but shows having been abandoned it was thought well not to waste them, but turn them to good account. Prize cards only were given in the competitive classes as mementoes of the show, and there were over 160 entries. The whole of the produce was sold for the above Fund. During the day 2,000 buttonholes were sold in the streets, realising £15 15s.

—— The arrivals of shipments of French and Dutch bulbs on the several steamers reaching this port since Tuesday of last week precludes any present danger of the shortage in this line. The chief anxiety now is as to whether the mid-season and late shipments of bulbs will follow as usual, and what the outcome will be in regard to Lily bulbs from the Far East, Lily-of-the-Valley from Germany, and the supply of seeds from England and European countries. *The Florists' Exchange* (U.S.A.), August 22.

—— The sale of Carnation blooms at Glasgow for the Relief Funds realised about £220. The blooms were supplied chiefly by Messrs. M. CAMPBELL AND SON, Blantyre, and Messrs. M. CAIG AND WEBB, Glasgow.

—— A show and sale of flowers, fruit and vegetables were held in Dumfries on September 5, in aid of the Relief Funds. Mr. S. ARNOTT presided at the opening ceremony, which was performed by Sheriff CAMPION. The produce was sent from a number of the local gardens, including Drumlanrig, Dalswinton, Terregles and Brocklehirst. Local nurserymen, including Messrs. BARR AND HUNTER, J. BOGIE AND SON, Mr. J. CROALL, and Mr.

A. W. M'Alister sent large quantities of flowers. The sum realised was upwards of £60.

—— We assume that the trade (American) in general has considered the probable effects of the European war on their business. It may be accepted at once that they will get nothing from Germany or Austria-Hungary, not only during the continuance of the war, but for a long time after, as the demoralisation of all business systems, and the practical annihilation of the German merchant marine will prevent the exportation or importation of anything but foodstuffs. What we shall get from Great Britain, France, Denmark and Holland is problematical. Until the seas are cleared of hostile cruisers commerce will be restricted to bare necessities, and the need of many ships as transports, and conversion of many of the largest liners into cruisers or commerce destroyers does not augur well for the seedsmen getting delivery of their contracts from any of the European countries. This will be most keenly felt in the line of small seeds, particularly in Radishes and biennials, and flower seeds, for excepting Sweet Peas Europe furnishes 75 to 90 per cent. of the flower seeds used in the United States. It is generally known that many of our seedsmen have placed large orders for garden Peas with German and British firms, including New Zealand. The high cost of producing Peas in Montana, Idaho and other north-western states, and the lowering of the duty, has enabled our German and British friends to underbid American growers, thus securing a considerable volume of business. It looks now as if those who are depending on foreign contracts would do well to face the situation as it is, and at least secure a part of their requirements before what seems now like an inevitable advance in prices occurs. It seems unlikely that such a serious situation can have escaped the attention of the officers and directors of the Wholesale Seedsmen's League, and an early meeting to take suitable action in the matter is not improbable. A general advance on nearly all lines seems inevitable, and we learn that wholesalers are rather chary about quoting on large quantities, and two sets of quotations which we have been permitted to see within ten days from two of the leading wholesale houses show advances of 50 to 100 per cent. over the prices of last season. *Horticulture* (U.S.A.).

—— Mr. P. C. Bridge has resigned temporarily his post as traveller to Messrs. J. Cheal and Sons, Ltd., to join the 25th County of London Regiment, Motor-cycle Section, and has volunteered for foreign service.

—— Messrs. George Bunyard and Co. inform us that they are maintaining their full staff at present, and are making provision where necessary for the wives of men who have left for the front, keeping the places open for them whilst they are away. They express the hope that the public will continue to support the nursery trade so that similar arrangements can be continued.

—— A large gathering of the employees of Messrs. Sutton and Sons, Reading, assembled recently in the firm's museum to consider the project of forming themselves into a body of men who by learning the use of the rifle and by drilling might in case of national urgency be useful for the defence of the country. Mr. Leonard Sutton presided, and expressed his pleasure at the evident enthusiasm of those present, who, he was sure, were also thinking of the many who had already gone from the firm's staff to join his Majesty's forces. He was particularly pleased to tell them that another nine had volunteered that day for the Territorials. Mr. W. Johnson, a veteran Volunteer, moved a resolution expressing the objects in view, and this was seconded by Mr. H. J. Barrett, another old volunteer, and carried unanimously. Mr. W. J. Brown, who with two others had been invited by Mr. Arthur Sutton to inspect his two rifle ranges at Bucklebury Place, then explained the admirable arrangements in force there, where the Service rifle is used, and also made it very plain that the object of their meeting that evening was not intended to interfere in any way with the plain duty of able-bodied young men to enlist at once. They simply wanted to train those who could not enlist, but who would like to prepare themselves for the purpose of being ready in case of a grave national emergency. A representative committee was then formed to at once get to work.

—— In regard to the paragraph published last week respecting the sum raised at Stamford by the sale of Roses, Messrs. Brown state that their Roses were distributed over a considerable area, and the proceeds together exceeded £200.

—— On Saturdays so long as the Rose season lasts 1,000 Roses will be presented by Mr. Elisha J. Hicks, Hurst, for the benefit of the National Relief Fund, and these will be sold in the streets of Reading by ladies of Hurst. The first sale resulted in £15 15s. 8½d.

—— Up to a day or two ago five members of the staff at Wisley and three students had enlisted in Lord Kitchener's army. These numbers, however, considerable though they be, do not do justice to the patriotic ardour of the staff. So general, indeed, is the desire of the staff to serve their country that in order to prevent the work in the gardens from being brought to a standstill the Council has been obliged to issue a letter to those members of the staff who had asked permission to enlist and whose services cannot be spared, pointing out that greatly as the Council appreciate the patriotism exhibited by the men, they are unable in certain cases to give their consent. The Council has, moreover, undertaken to keep open, so far as is possible, the places of the men who are serving their country, and to pay them half their wages whilst they are in the Army. We understand that there is a movement on foot among those of the Wisley staff who are not allowed to enlist to organise a subscription in order to contribute to the wages fund guaranteed by the Council. During the first week of the war the number of visitors to the R.H.S. Gardens fell off very considerably. Latterly, however, since people in general have resumed in a measure the even tenor of their way the numbers visiting the Gardens have increased.

Another Show Abandoned.—The Committee of the Hull Chrysanthemum Society has decided to abandon the show for 1914.

"The Orchid Review."—The September number of this Orchid monthly is specially interesting as it includes two decades of new Orchids which have appeared in the *Kew Bulletin* and notes on many other rare species. Some well-reasoned remarks on Heredity and Evolution, good articles on Orchid Culture, Orchid Notes and News, and an interesting account of the extremely variable Cattleya Sybil (Dowiana × iridescens), with illustrations of seven forms, are also given. The other illustrations are Angraecum sesquipedale, Cycnoches densiflorum, Grammangis Ellisii and Rhyncostylis guttata.

"The Orchid World."—The September number of this monthly illustrated journal devoted entirely to Orchidology completes the fourth volume, and well maintains the high standard of the work. Among other interesting matter it has a review of the methods of the early days of Orchid-growing with illustrations and notes based on the Orchid book of J. C. Lyon, published in 1845, and an article on Calanthes taken from the *Manual of Orchidaceous Plants* by Messrs. Jas. Veitch and Sons; a Note on Orchids at Calcutta, with a figure of a fine specimen of Arachnanthe Lowii flowering in the collection of Gosto Behary Seal, Esq., Calcutta.

Cyanamide and Superphosphate.—Experiments reported in the monthly *Bulletin of Agricultural Intelligence* indicate that it is not advisable to mix cyanamide and superphosphate. Although the nitrogen of the former is not affected, there is, as a result of the mixing, a reduction in the amount of water soluble phosphoric acid of the latter fertiliser.

Herbaceous Flowers from Hopetoun.—A striking feature at the recent show of the Leadhills Horticultural Society was a magnificent collection of hardy herbaceous flowers from the garden of the Marquis of Linlithgow at Hopetoun House, South Queensferry. The estate on which Leadhills and its lead mines are situated belongs to the Marquis of Linlithgow, and the horticultural society always owes much to the successive lords of the manor. The gardener at Hopetoun generally acts as one of the judges, and this year Mr. John Highgate again officiated at Leadhills in this capacity. The herbaceous borders at Hopetoun are noted for their excellence and variety

Washington Botanic Garden to Change Site.—On August 12 was passed the Slayden Bill to transfer the National Botanic Garden from its present site on Pennsylvania Avenue, facing the Capitol, to a splendid 400-acre expanse in the unimproved northern end of Rock Creek Park. Representative Sladen made a speech from which the *Florists' Exchange* quotes as follows:—"One of the most economical things we can take up in this country is the cultivation of our forests. How to conserve our forests, how to grow other trees to take their places when these are gone, is important. One hundred years ago European nations destroyed their great forests. The result was a bad effect upon the climate of such countries as Spain, for example, and in the last forty years or so the great European nations have devoted much time and thought and money and the skill of their learned men to reforestation. We ought to be prepared to do the same thing; and in order to do it intelligently we must have scientific research and advice. The land which it is proposed to take in Rock Creek, or which has been suggested to be taken, because it is not specifically defined anywhere, offers, so soil experts say, an excellent opportunity and splendid conditions for the cultivation of plants; and the idea in the minds of those of us who are interested in this project was that when we get such a project established it will develop into a great establishment and be of immense economical advantage We not only cultivate flowers in botanic gardens, but we cultivate plants for other reasons—we cultivate plants out of which drugs are made; we cultivate plants which will add health and comfort to our fellow-citizens."

Use of Magnesia for Purifying Water.——The *Pharmaceutical Journal* remarks that if water containing magnesia and lime as bicarbonates and sulphates is moderately heated the deposit which is formed is quite free from magnesia, magnesium sulphate remaining in solution; whereas if the same water is heated more strongly under pressure magnesium carbonate is found in the deposit, and calcium sulphate remains in solution. The former fact may be utilised in purifying water for boiler use; if an ordinary hard water containing calcium bicarbonate and sulphate is heated with magnesium oxide or hydroxide this first reacts with the calcium bicarbonate, forming calcium carbonate and magnesium carbonate, and the latter then reacts with the calcium sulphate, whereby all the calcium is thrown down as carbonate, and magnesium sulphate alone remains in solution. The magnesia is best introduced in the form of "magnesia shavings"—*i.e.*, wood shavings on which magnesia has been deposited in such a way that it will not wash off by the action of a current of water. The water to be purified is heated and passed through a series of cylinders containing such shavings, and is so obtained quite bright and free from all calcium. If the water originally contains an excess of calcium sulphate some magnesium carbonate must be added as well as the oxide.—Bohling and Roth (*Chem. Zeit.*, July 7, 1914, 859).

Distribution of Stomata in Some Graminaceous Seedlings.—*The Pharmaceutical Journal* for August 15 gives the results of experiments conducted by E. Zalpffel on the location of stomata on growing seedlings of Wheat, Oats, Panicum altissimum, and Paspalum stoloniferum, and their relation to the observed heliotropism of the growing parts. The seedlings were all grown on moist blotting-paper under a bell jar at the normal laboratory temperature. In the case of Wheat and Oats the stomata occurred in the greatest number at the apex of the cotyledon; they were less numerous in the subapical portion, and absent at the base. The same distribution of stomata was observed in plants grown in the dark as in the light. It is noted that the region of the cotyledon in which the stomata are most abundant is that of the greatest heliotropic sensibility. In Wheat and Oats sprouts it is the apex which moves most readily to light stimulation. The subapical portion is barely influenced, and here there are but few stomata. In the case of Panicum and Paspalum seedlings there is no concentration of stomata at the apex of the cotyledon. They are evenly distributed over the whole surface. Here the whole cotyledon is equally influenced by light throughout its entire length, and not only at the apex as in the case of Wheat and Oats. It would seem, therefore, that there is a distinct connection between the position of stomata and light perception in seedlings.

Tree-Planting in Uruguay. — Attention is drawn in the American press to the possibility of sale of flowering plants, shrubs, and trees in Uruguay. Inasmuch as the central and southern parts of Uruguay are almost treeless, planting for shade as well as for general utility is necessary, and it is said that fruit, shade and decorative trees, as well as shrubs, flowers, and small fruit, are in demand. Some 17,000,000 forest trees have been planted within the last few years, and fruit culture grows yearly in importance. Of fruit Apple, Plum, Pear, Peach, Cherry, Grapes, Melons, etc., are being planted, there being now nearly 100,000 acres under fruit and about 15,000 acres of vineyards. The soil and climate are suitable for almost all sub-tropical and temperate plants. Trees and plants generally are admitted duty-free into Uruguay.

Gladiolus vitriacensis. —This hybrid, raised by Mr. F. Cayeux as the result of a cross between a very early variety of G. Lemoinei and one of the early dwarf hybrid Gladioli, is stated in a note in *Le Jardin* (July 20, 1914, p. 211) to have considerable resistant properties. Planted in autumn with other hybrid Gladioli, and given the protection of only a simple châssis, it came through the winter very well, whilst the others of the dwarf race were for the most part destroyed by frost.

Pittosporum Dallii, of T. F. Cheeseman, first described from incomplete specimens about ten years ago, has been re-discovered by Mr. F. G. Gibbs, who states that it is far handsomer than any other of the New Zealand species of Pittosporum that he has seen. It is the only New Zealand species having white flowers, and these are very fragrant. P. Dallii is described as a round-topped tree 12 to 18 feet high, not closely related to any other species, and differing in its regularly serrated leaves from all other New Zealand species, and from all other species, except P. eugenioides, in its flowers being borne in relatively large compound cymes. This new species inhabits the mountains behind Collingwood, in the Province of Nelson, at an altitude of 3,500 feet, and will probably prove hardy in the South and West of Great Britain and Ireland.

STREPTOCARPUS BANKSII.

This fine hybrid is one of several that have been raised recently in the Cambridge Botanic Garden. It is between S. Wendlandii (male) and one of the named forms of the usually grown hybrid strain (female), the latter with blue-white margined flowers. The cross was made by Mr. G. H. Banks, foreman of the plant-houses, and I have pleasure in naming it after him. It is a fine ornamental plant, striking at first sight on account of its bold, strong inflorescences, but also on account of the large blue-purple flowers. It is much larger and stronger than any ordinary strain of Streptocarpus, and if in future generations variety in colour can be added, without reducing strength of habit and size, it must become a valuable addition to our resources for the decoration of the conservatory in summer. The seeds were sown about the middle of last November, the first flowers opened early in July, and it is now evident that the batch of plants will go on flowering for a considerable time. Of the parents, S. Wendlandii is well known as one of the finest of the species. It is figured in the *Botanical Magazine*, tab. 7447, and it is there said that it "far surpasses in size and beauty all the previously discovered species of its beautiful genus." Usually it has only one leaf, which attains a length of thirty inches and a width of twenty-four. This hybrid is more moderate and convenient in size, the leaf being about nineteen inches long by about thirteen inches wide. Instead of one leaf it has usually two leaves, the second being smaller and produced on the same side of the plant. In the case of one plant, however, the leaves are opposite and equal in size; there is then a short internode of stout stem and again a pair of opposite leaves. This is so unlike the habit of this section of Streptocarpus that it deserves remark, and it shows no doubt a reversion (if it is such) to ordinary leaf and stem growth. The plant is just what an ordinary large-leafed Gesnera might be, except that the stem is shorter. There is, it may be remembered, a caulescent group of the genus Streptocarpus, but its members little resemble the usually cultivated species except in the spirally twisted fruit. The plant illustrated is growing in a 32-sized pot. *R. Irwin Lynch.*

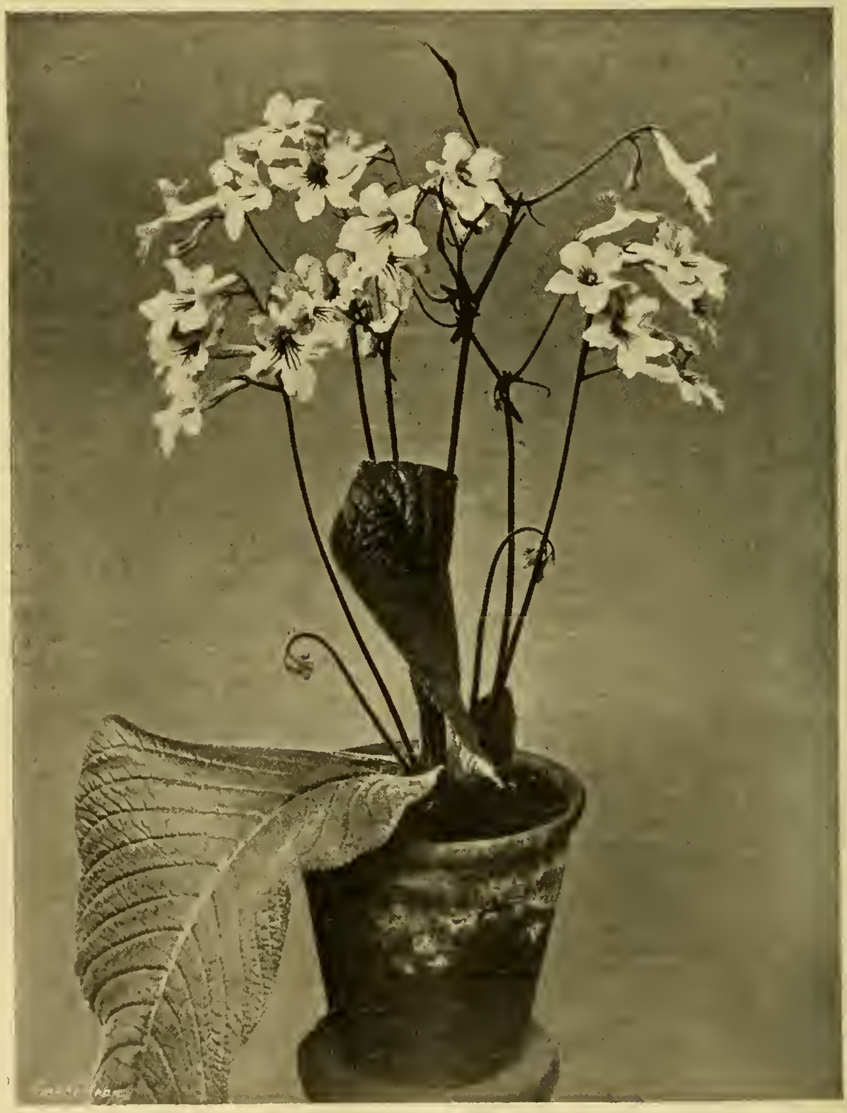


Fig. 75.—Streptocarpus Banksii, a hybrid raised in the Cambridge Botanic Garden.

FOREIGN CORRESPONDENCE.

CYCLAMEN CULTURE.

The culture of Cyclamen in Germany has, up to the present time, been largely dependent on organic manure, the plants having been grown from their first pots onwards on hot-beds packed with horse-manure. In modern days, however, the displacement of the horse by the motor-car has made manure both difficult and expensive to obtain, and I have for some time past been experimenting with a view to discovering a substitute. The result has been so successful that it may interest your readers to know my method. On both stages of the house (which was new and well ventilated), I spread 2 inches of coarse peat. On the top of the peat I laid five 1 inch pipes, 10 inches apart, and covered them with a layer 2 inches thick of fine peat; and in order to ensure bacterisation, I introduced a sprinkling of slightly rotted cow manure between the two layers of peat. For the purpose of engendering a supply of carbonic acid I mixed some carbonate of lime with the top layer of peat, with successful results, and the atmosphere of the house, even in the day, is always particularly fresh and wholesome. The growth of the Cyclamens in this house yields a gratifying testimony to the success of the experiment, being more rapid and robust than in the other houses. The stock is of an excellent quality, the foliage shapely and well developed, and the flowers of large size and good colour. I am also applying the same method of cultivation to Begonia Gloire de Lorraine, with equally good results. Both leaves and cuttings grow in the peat-bed with remarkable facility, partly because the peat-bed holds the moisture for a week without requiring any watering, thus minimising the risk of spoiling the plants by wetting the leaves. *Ferdinand Fischer, Wiesbaden-Aukamm, Germany.*

THE MOON'S EFFECT ON PLANTS.

Mr. Buysmann (*Gardeners' Chronicle*, Vol. LV., p. 346) tells us that in Holland all the farmers believe that the phases of the moon have a definite influence on plants, and he would like to know whether the same belief exists in other countries. Here in Southern Italy the moon is believed to play an important part in agriculture. All vegetable seeds, Corn, Maize, and other crops, are sown at the waning moon; they are believed to germinate best at this time, but to grow faster at the waxing moon. Moreover, it is thought that if sown in this manner they are less likely to be attacked by pests. Personally I have not tested the truth of these dogmas, as I have never relied on the assistance of the moon in my horticultural operations. The same superstition enters into the rules for the harvesting of fruits. All the winter fruits, including Apples, are gathered when the moon is on the wane; they are believed to last longer if harvested at this period than at any other. Tomatos for winter use also come under this rule; though they are not stored away, but left hanging in the open air, protected only from rain. Trees for timber are never cut when the moon is waxing; no woodcutter could be induced to fell his trees at so unlucky a time, for (he would tell you) the timber would inevitably be found to be infested with woodlice! *Willy Müller, Fratte di Salerno, Italy.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

How to Preserve Flowers.—A very interesting way of preserving flowers is as follows:—The first thing is to secure a wooden framework, such as would be formed after knocking the bottom out of a box. This should not be more than about five inches in depth. Where the bottom would be in the ordinary way a piece of rather small-mesh wire netting must be stretched right across. Next secure a flat piece of board on which the framework may be stood, the wire netting side being downwards. Now get a quantity of white sand. This will probably be very dirty, even though it looks clean. For the purpose under notice it is necessary that it should be washed quite clean, and the best way to do this is to keep on putting it into bowls of fresh water. All the portions of dirt will in this way be readily removed, so that there will be nothing left behind but pure white grains. The sand must now be thoroughly dried on a tray in an oven. When it is quite hot put a portion of candle wax in it about the size of a walnut, and as this melts stir the grease well amongst the sand. This prevents the grains of sand from sticking to the petals of the flowers. We may now start to collect our flowers from the garden. These should, of course, be in as perfect a state as possible, and it is rather a good plan to see that the blossoms are free from rain or dew drops. A very wide range of flowers will stand this treatment well. Roses, Campanulas, Pelargoniums, any Daisy-like blooms (such as Marguerites), and Fuchsias, to mention only a few, are all good subjects. In most cases it will be found that the very brightly-coloured flowers give the best results, and in some instances white petals, or those of a pale tint, are rather unsatisfactory. It is, of course, understood that the wooden frame is standing on the piece of board. The first step should be to spread a layer of sand sufficiently deep to cover the wire netting, which, it will be remembered, has been fastened in the lower part of the framework. On this sand the blossoms which are going to be preserved should be spread out. Some care is necessary at this point in order to keep the proper shape of the flowers. Thus with bell or cup-shaped blooms the sand should be carefully filled into the centre of each, so that the formation may not be disturbed. In other instances it may be necessary to bend the stem gently so as to maintain the correct posture. It will be found at this stage that a little sand spread over the various parts as they are arranged will keep them in the right place. When all the flowers are arranged the sand should be spread over them, so that they are all completely buried. Another layer of flowers may now be spread over the sand and arranged in the same way as the previous one. Whether a further layer can be added will depend, of course, upon the size of the blossoms. In any case, it is not a wise plan to arrange more than three layers in one frame. As the final lot of flowers is placed in position the sand should be filled in up to the top of the frame. A warm, dry place is now needful in which to put the framework. One of the best positions would be on the top shelf of a sunny greenhouse. Where such a situation is not available, however, a kitchen cupboard might serve very well for the purpose. A good deal depends on the weather as to the length of time over which the flowers are allowed to dry. If the conditions are very damp about a fortnight must be allowed, whilst in hot, dry weather the blossoms would be ready for removal in a week. When it is decided to open the framework it is necessary to proceed with some care, as the dried flowers will be very brittle. Lift up the frame very gently in such a way that the sand is allowed to stream through the netting. The dried blooms will, of course, be left behind in a heap, and from this they must be carefully picked out one by one. They will be found to be beautifully preserved in their natural colours, and, if the directions have been closely followed, will appear to be in a life-like condition. The preserved flowers will keep for an indefinite period if they are allowed to remain in a reasonably dry atmosphere. During a spell of very wet weather in a fireless apartment there is a danger of mould appearing on the blossoms, and this should be at once removed, as it will tend to destroy the delicate petals. Also it is as well not to allow the flowers to stand in the direct rays of the sun for long, as they are apt to fade. Otherwise the blossoms will retain all their bright colours for a long while. *L. B.*

The Plentiful Fruit Crops.—There must have been a deplorable waste of perishable fruit recently, many having refrained from purchasing owing to the price of sugar. We have still the main Pear and Apple crop, and if the little trouble and expense involved in the preservation of Pears by bottling were considered with an unbiased mind, surely there would be quantities preserved in this simple manner. I understand Apples which are not wanted are being rushed on to the market, and the custom of past years is already apparent this year, of selling long-keeping varieties directly they are taken from the trees. In private gardens great circumspection should be used in not being hurried in gathering Apples until they are quite ready. The fear of loss by wind has perhaps much to do with the premature gathering of Apples, but it is better surely to lose a few rather than have the whole deficient in quality and incapable of being kept. It is a fact that the fruit is gathered without the slightest discrimination in many cases when it is apparent that very many varieties should be examined repeatedly and those ready taken, leaving those less forward to mature. Fruit rooms would hold much more fruit were the grower convinced that no damage or loss follows heaping the Apples instead of laying them out in single or double layers. Then there is always room in the garden to clamp them in the same manner as Potatos, the one point of first importance being to permit the free admission of air till the sweating process is completed, afterwards sealing them up till required. *R. P. Brotherston.*

The Value of Destroying Queen Wasps.—Last spring many of your correspondents deplored the action of gardeners destroying queen wasps, on the ground that the plague of flies would be worse. I attacked queen wasps with vigour here, with the result that so far there is hardly a wasp to be seen in my garden and only one nest has been found. There is not at present one fly where last year there were ten. My bees have not done well; they appear healthy, but the stocks dwindle, which is the complaint of all bee keepers in the neighbourhood. There appear to be no drones. *R. Oswald Fordham, Broom Hall, Biggleswade.*

The Double-flowered Peach.—My double-flowered Peach has a crop of 80 Peaches, now about the size of Victoria Plums or larger, but still green. It is the more surprising as neither Pears nor Plums have given more than the scantiest crops, owing to our N.E. exposure. I have seen another double Peach also fruiting in a friend's garden at Shirley. Is this usual? Is there a likelihood of the fruit ripening and proving valuable? *J. Edmund Clark, Asgarth, Riddlesdown Road, Purley, Surrey.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, ante, pp. 87-93.)

(Concluded from p. 182.)

Worcestershire.—Although the season started with unusual promise, the fruit blossom being very healthy, this has been one of the most disastrous seasons on record. The gardens are low-lying, and in close proximity to water, therefore we felt the worst effects of the severe frost on May 2. Pears and Plums were frozen, and the Apple and Strawberry blossoms were affected. This was followed by severe frosts on the mornings of May 27 and 28. The only Pears we have are on wall trees, and these were well protected with foliage. Gooseberries which were well covered with foliage came through fairly well, also Red and White Currants. Ogden's Black Currant proved its hardiness by giving a fair crop. The dire results of this season is plain evidence that all gardens and orchards where fruit growing is carried on should be on rising ground facing the south and west, thus escaping the May "ground" frosts. In such gardens in this district, fair crops are to be seen. *A. Young, Witley Court Gardens, Worcester.*

—— Never before, during 32 years' experience at Madresfield, have I had to report so unfavourably on the hardy fruit crops. On May 1 the prospects were never better, but on May 2 the crops were ruined. Previous to this we had nearly a fortnight of hot, tropical weather, and a minimum temperature at night of 62°, a thunderstorm took place, and on the night of May 1 the thermometer registered 8° of frost quite early and continued throughout the night. This sudden change was too much for all vegetation, and even the common Oak trees appeared as if they had been scorched. On May 25 and

26 we had further severe frosts at night, which completed the destruction of nearly all hardy fruit crops. What few Pears set are black at the core, consequently seedless and useless. *W. Crump, Madresfield Court Gardens, Malvern.*

—— On May 2 we experienced 12° of frost, which damaged some of the fruit crops, and 15° at the end of May, which did an immense amount of damage as the fruits were wet. The Strawberry crop was the worst ever seen; about 80 per cent. less than last year. Pitmaston Duchess Pears are almost a complete failure, but there is a fair crop of Williams' Bon Chrêtien. Chaumontel is the best cropped variety, with the exception of Vicar of Wakefield, which is very good. A few early varieties have a fair crop, but Jargonelle is only about three parts of a crop, whilst Louise Bonne of Jersey is almost a failure. The soft, early varieties of Apples are above the average, but we have scores of trees with practically no fruit. Blenheim Pippin Apples are scarce, and King of the Pippins is a moderate crop of very small fruit. On the whole Apples and Pears are disappointing. Cherries were good and clean. The soil varies, being clay in some parts, sandy and gravelly in others. *Thas. Watkins, The Grange Gardens, Claines.*

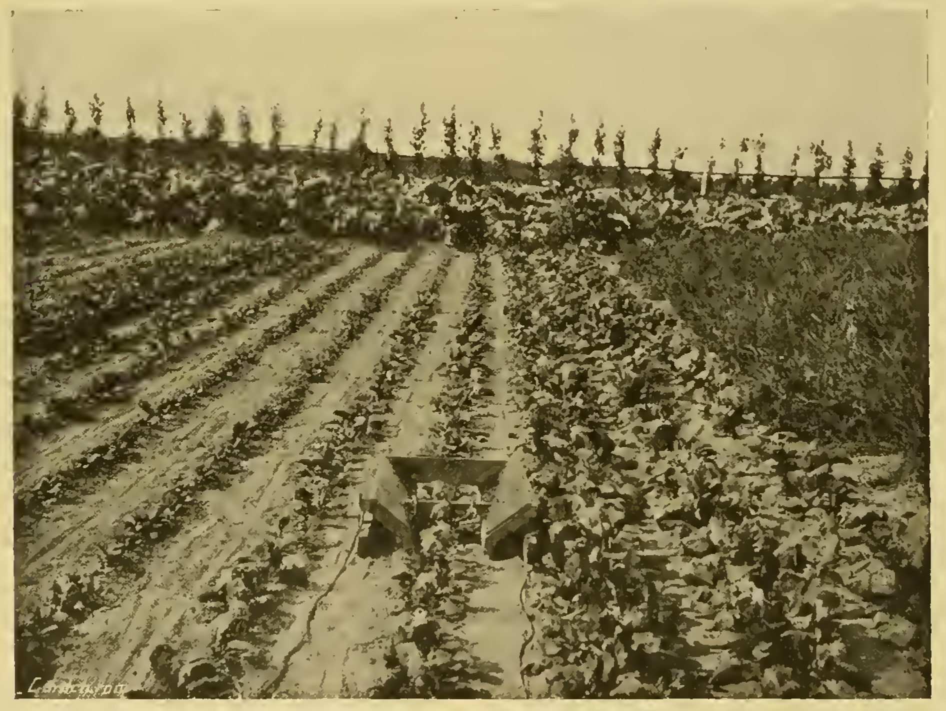


Fig. 76.—THE WISLEY TRAP FOR TURNIP FLEA BEETLE, ILLUSTRATED IN THE LAST ISSUE (SEE P. 180).

(The three fine rows on the right were treated; the others, commencing with the row in which the trap is situated, were not treated.)

—— Raspberries, Gooseberries, Red Currants, and Plums are very heavy crops. The Strawberry crop was an average one, and the quality good. The Pear crop in these gardens is average. The soil here is a good medium loam, resting on a bed of sandstone. *Ernest Avery, Finstall Park Gardens, Bromsgrave.*

—— The promise of fruit in 1914 was a very good one, the trees being in a fruitful condition and the flowers perfect, but the frosts on the mornings of May 2 and 26 were too severe to leave the flowers uninjured, and much damage was done to all kinds of fruit—especially in districts at a lower altitude than 150 feet above sea-level. In positions above that level the injury was less severe, and moderate crops of all kinds of fruit are to be seen. *James Udale, Ombersley Road, Droitwich.*

WALES.

Cardiganshire.—The fruit crops in this district are not altogether favourable, as the late frosts, at the end of May, did a great amount of damage. We escaped in these gardens with only 3° of frost, as our altitude is 700 feet. The blossom was abundant on nearly all varieties of Apples, Pears, Plums, and Cherries, but some varieties failed to set well. The following varieties of Apples are carrying good crops:—The Queen, Mère de Ménage, Bramley's Seedling, King's Acre, Bountiful, Bismarck, Cox's Pomona, James Grieve, and Warner's King. Pears: Doyenné du Comice, Marie Louise, Williams' Bon Chrêtien, Souvenir du Congrès, Clapp's Favourite, Pitmaston Duchess, Beurré d'Aremberg, Autumn Nelis, Princess, Conference, and Beurré Hardy. Of Plums there are good crops of Victoria, Old Gage, Transparent Gage, Jefferson's, Czar, Rivers' Early Prolific, Monarch, and Pond's Seedling. Our soil is a very cold clay, overlaying slaty rock. *William Phillips, Derry Ormond Park Gardens, Llangybi.*

Carnarvonshire.—The fruit crops generally in this district are good. Apples flowered profusely, set well, but dropped badly, leaving us with only an average crop. This appears to be a record year for aphis of all kinds, which entails an enormous amount of labour. A long spell of drought shortened our Strawberry supply. Bush fruits of all kinds produced great crops of good quality. Our soil is gravelly, and the subsoil gravel, consequently we feel the drought acutely. *J. S. Higgins, Glynllivon Park Gardens.*

Denbighshire.—All fruit trees blossomed abundantly, but on the night of May 1 we had 11° of frost, which killed most of the flowers on exposed trees. Some varieties of Plums have good crops, others none, and in places Damsons are a good crop. The soil in this district varies from heavy loam on a clay subsoil to a light soil on a gravel subsoil. *J. A. Jones, Chirk Castle Gardens, Ruabon.*

Glamorganshire.—The fruit crop in this district is a record one. Although we had late spring frosts and cold nights when most of the trees were in bloom, the foliage was a great protection, and the majority of the blooms set well. Apples have required much thinning. Bramley's Seedling, Lane's Prince Albert, James Grieve, Alington Pippin, Gascoyne's Scarlet, King of the Pippins, Charles Ross, Dumelow's Seedling, and Lord Suffield are the most favoured varieties in this district. Pears are also very good and clean, especially the varieties Marie Louise, Doyenné du Comice, Winter Nelis, Louise Bonne of Jersey, and Pitmaston Duchess. Peaches and Nectarines are the best crops on record, and the trees are free from blister and aphis. Plums are an average crop for this district, and Cherries were very good, both as regards quality and crop; especially the Morello variety, which is the heaviest crop we have had for the last five years. With the exception of Raspberries, which were slightly under the average, all small fruits were excellent, and the quality all that could be desired, especially Black Currants, Strawberries and Gooseberries. The soil here is inclined to be light, on a gravelly subsoil. *R. Milner, Margam Park Gardens, Port Talbot.*

—— This is the best season for fruit crops that we have had for many years. Cherries were abundant, and there is a heavy crop of Pears, and the fruit is all that could be desired. *C. T. Warmington, Penllergaer Gardens, Swansea.*

Montgomeryshire.—The Apple crop promised well, but a severe frost on May 2 prevented a bumper crop. This also applies to Strawberries, for the crop was practically ruined. In many years' experience I have never seen such a complete failure with Strawberries. *A. Gribble, Plas Machynlleth Gardens, Machynlleth.*

Pembrokeshire.—Pembrokeshire is not a good fruit-growing county owing to the Atlantic gales in the spring, and also to late frosts. At Slebech, which lies in a deep valley, we had a somewhat singular experience with our Apple crop. On May 24 we had 6° of frost, and our bush Apples suffered rather badly, as also did the tops of the large orchard trees, but the lower branches, having been sheltered, are loaded with fruit. *Geo. Griffin, Slebech Park Gardens, Haverfordwest.*

Radnorshire.—There is an over-average crop of fruit in this district, although drought caused orchard trees to drop a quantity of their fruit. Plums are a very heavy crop this year; the fruit is clean but small. Pears were also above the average, and early Apples carried good crops, but late varieties, such as Dumelow's Seedling and Prince Albert are not so fruitful. Frost wrought havoc with Strawberries and Raspberries when in flower, but Gooseberries, Currants, and other small fruit were plentiful. *J. MacCormack, Maesllwch Castle Gardens, Glasbury.*

9. IRELAND, N.

Fermanagh.—There was a frost here on May 24 of 2°, followed by a very heavy one of 7° on May 25, which almost ruined the promising Strawberry crop, which was then setting. It also caused considerable harm to the Pear crop. Apples were not so badly affected, and there is a fine crop. The bush fruits were the best on record. *J. Moncrieff, Florence Court Gardens, Enniskillen.*

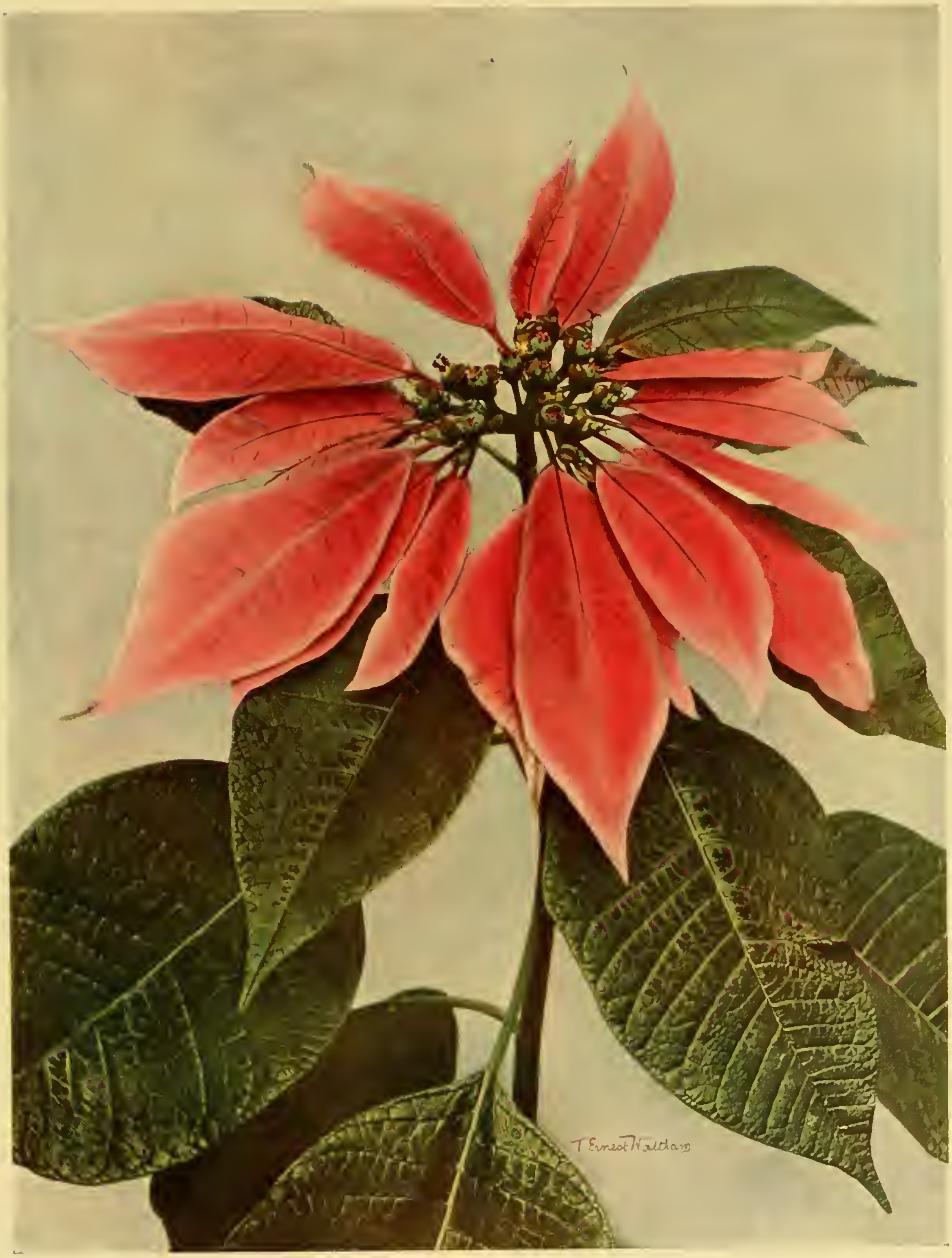
—— The Apple crop is, on the whole, somewhat disappointing. In the majority of orchards the variety Bramley's Seedling is grown, and I have observed some peculiar features in this variety. One orchard may have a very heavy crop, while another a few hundred yards distant may have none. Whilst in most cases orchards on the top of a hill, where the soil is somewhat thin, may be carrying a full crop, those in the valleys or on level and somewhat richer soil carry a very light crop or none at all. *Thomas Shiels, Lanesborough Lodge Gardens, Belturbet.*

Meath.—Plums and Damsons carry heavy crops, and it does not appear that it will pay to pick them. *Michael M'Keown, Julianstown, Drogheda.*

Monaghan.—All fruit trees and bushes promised abundant crops of fruit, but we experienced 9° of frost in the middle of May which destroyed many of the blossoms and the young fruits which had set. Apples and Strawberries suffered more than any other fruits, the Apples being almost a failure. We have a heavy, cold soil, and low situation. *James Hepburn, Dartrey Gardens.*

Tyrone.—The fruit crops in this neighbourhood are satisfactory on the whole, both as regards quantity and quality. Apples and Pears set thickly, necessitating much thinning. The frosts did no harm except to a few early Strawberry blooms, which were blackened. Insect pests have not troubled us to any serious extent, but the dry weather was conducive to the spread of aphis on Plums and Cherries, and American Blight is, as usual, in evidence on the older Apples. There is an appearance of shot-hole fungus on Plums, and the silver-leaf disease seems to be on the increase.

Supplement to the "Gardeners' Chronicle."



POINSETTIA PULCHERRIMA ROSEA.
(N.O. Euphorbiaceae.)

Fred. W. Walker, Sion House Gardens, Sion Mills.

Westmeath. — What promised to be a record fruit crop was marred by the continued drought and by a sharp frost which we experienced on May 25, as much as 7° being registered in low-lying districts. Since May 9 the rainfall in this district has been exceedingly light, consequently fruit trees, and more especially wall trees, have suffered considerably. Plums on walls are only an average crop, but standard and bush trees are carrying exceedingly heavy crops. In exposed, low-lying districts, much damage was done to Apples, Plums and Gooseberries by the frost. *Geo. Bogie, Pakenham Hall Gardens, Castlepollard.*

10. IRELAND, S.

Cork.—All fruits suffered from severe frost on May 24. We have had very little rain since April, and Black Currants, Raspberries and Strawberries suffered considerably from the long drought, and were, generally speaking, a poor crop, particularly on light soils. *J. Dearnaby, Magazine Raod, Cork.*

Kildare.—What promised to be an all-round record fruit crop was ruined by the frosts on May 24 and 25. Apples have suffered the most, and there are very few. Tower of Glamis and Christmas Pearmain are unhurt, and there are a few on trees of Schoolmaster and Cox's Orange Pippin. Raspberries and Strawberries also suffered badly. *Fredk. Bedford, Straffan House Gardens.*

Longford.—This county grows but a very limited amount of fruit, and we have few large estates. Apples and Pears are chiefly grown, with odd patches of small fruits and Strawberries. We had every promise of a record Apple crop, but the severe frost on May 25 ruined our prospects. Strawberries turned out much better than we anticipated, more especially the later varieties. Raspberries were under average, but Loganberries were remarkably good. The nature of soil here varies in a marked degree, some parts peaty and other parts yellow loam on freestone. The way it varies is remarkable, but all are very productive and fertile. *J. A. Bayle, Castlefarbes Gardens, Newtownforbes.*

Tipperary.—In the early spring months all kinds of fruit crops looked remarkably promising, with abundance of blossom. On the night of May 24 a very severe frost damaged almost all kinds. The soil is heavy in this neighbourhood. *John Fraser, Shanbally Castle Gardens, Clogheen, Cahir.*

Waterford.—All fruit crops here may be said to be over average and good. Boscoop Giant Currant carried a most abundant crop of very large fruit. Apricots do poorly on our light land, and suffer from want of limestone. The 8° of frost on the morning of June 26 almost ruined a splendid promise of Strawberries. Apples, after a good mulching, swelled up beautifully, and promise a good fruit in size and colour. The soil is of a poor, gritty nature, on a stiff, clayey subsoil. *D. Crombie, Curraghmore Gardens, Portlaw.*

CHANNEL ISLANDS.

Guernsey.—This has been a most disappointing season, although all crops promised well in early spring. The trees carried a very fine show of bloom and the fruit was setting well and evenly until we had a spell of cold winds. Not only did the winds blow off a large portion of the bloom, but they also destroyed much fruit that had just set. In addition, we have had a very dry May and June, which has brought down the Apples and Pears in enormous quantities in places where no water could be given. *C. Smith and Son, Caledonia Nursery, Guernsey.*

Jersey.—The fruit crops this year are fairly good, but the weather during the growing season has been, and is, much too dry, as we have had no rain to speak of since March. The fruit will therefore be small through lack of moisture. The climate for growing purposes has been very variable. The whole of the month of March there was one continual rainfall, which caked down the soil like cement; since then there has been scarcely any rain, and this is not favourable for good growth. *T. Sharman, Imperial Nursery, St. Heliers.*

SOCIETIES.

ROYAL HORTICULTURAL.

September 8.—After a lapse of six weeks, occasioned by the outbreak of war and the consequent recruiting arrangements, the Royal Horticultural Society was again enabled to hold a show and meeting at Vincent Square on Tuesday last. The further annexe was still in the possession of the Military Authorities, and the drilling of squads, companies, and a half-battalion of the London Scottish (T.) which proceeded throughout the day on the Westminster School playing fields opposite the hall was observed with interest by many of the Fellows.

The special show of Dahlias brought large numbers of the autumn flower; these, with Gladioli and Sweet Peas, were the chief floral features of the show.

Orchids were fairly numerous. The Committee recommended 1 First-class Certificate, 2 Awards of Merit, and 4 Medals to novelties and collections.

The Floral Committee recommended 5 Awards of Merit and 15 Medals to new plants and groups.

The Joint Committee of the R.H.S. and the N.D.S. granted 11 Awards to new Dahlias, and this body was responsible for judging the two competitive classes.

The Fruit and Vegetable Committee recommended a Medal to a collection of fruit trees and an Award of Merit to a Blackberry.

At the 3 p.m. meeting of Fellows in the Lecture Room Mr. James MacDonald gave a lantern-slide lecture on "Lawns and their Upkeep."

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. sec.), W. Bolton, Gurney Wilson, J. Charlesworth, E. H. Davidson, W. H. White, A. Dye, H. G. Alexander, J. E. Shill, J. Cypher, W. H. Hatcher, T. Armstrong, A. McBean, F. J. Hanbury, S. Low, R. A. Rolfe, S. W. Flory, C. H. Curtis, and Sir Harry J Veitch.

AWARDS.

First-Class Certificate.

Cattleya Sibyl var. Lord Kitchener (*aurea* × *iridescens*), from Messrs. Hassall and Co., Southgate. Following their pretty and fragrant C. iridescens (bicolor × Eldorado), by crossing with C. Dowiana aurea Messrs. Hassall and Co. produced a very pretty break, which has been remarkable in the extreme variation in the flowers of the different varieties, some having the form of C. aurea and others that of C. bicolor. The variety Lord Kitchener is a superb flower, of large size, fine shape, and unique colour. The broad sepals and petals are deep chrome yellow, with a slight shade of rose colour, the finely-expanded, flatly-arranged lip deep yellow at the base, with the broad front ruby-crimson. The side lobes of the lip are short, well showing the thick, white column.

Awards of Merit.

Cattleya iridescens var. aurifera (*bicolor* × *Eldorado*), from E. H. Davidson and Co., Orchid Dene, Twyford. A model flower of medium size. The sepals and petals are clear golden-yellow, the front of the lip rose-purple with a slight white margin, the isthmus between the side and front lobes being Orange colour.

Laelio-Cattleya Thyone McBean's variety (*L.-C. Ophir* × *C. Dowiana aurea*), from Messrs. J. and A. McBean, Cooksbridge. A very bautiful hybrid, of fine shape. The sepals and petals are yellow, and the broad lip of purplish-crimson with fine yellow lines running from the base.

General Exhibits.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for an interesting group, many of the plants in which had been raised at Rosslyn. The exhibit included two forms of Cattleya Suavior, C. Thayeriana, C. venusta (Armstrongiae × intricata), a pretty new hybrid C. Venus (Iris × Dowiana aurea), and a selection of good Cypripediums, C. pictum (nitens × glaucophyllum), raised at Rosslyn, being new.

Messrs. Charlesworth and Co., Haywards Heath, were awarded a Silver Banksian Medal for a group of fine specimens, which included grand plants of Odontoglossum ardentissimum and variety xanthotes, the large, pure-white Habenaria Susannae, Brasso-Cattleya Madame Chas. Maron, and other Brasso-Cattleyas, and the fine Cattleya Rhoda, a remarkable form, with pale yellow sepals and petals and rosy-violet lip.

Messrs. Sander and Sons, St. Albans, secured a Silver Banksian Medal for a group rich in rare species, among which were the new Peruvian Zygopetalum Prainianum, with green sepals and petals marked with purple, and white lip with strongly-ridged rose-coloured callus. It is near to Z. Burkei. A good selection of Cattleyas included an albino of C. Leopoldii, with pale green sepals and petals and pure-white lip; some good C. aurea, of which the variety excelsa was the best, a selection of Cypripediums, in which the C. Maudiae and other green and white forms showed well; some bright Laelio-Cattleyas, including selected forms of L.-C. Walter Gott; Odontioda Euterpe of a peculiar brick-red tint; and the pretty scarlet Laelia monophylla with thirty flowers.

Messrs. Stuart Low and Co., Bush Hill Park, and Jarvisbrook, Sussex, staged an effective group, for which a Silver Banksian Medal was given. Some good Vanda caerulea and elegant Oncidium incurvum gave character to the arrangement, which also included several new hybrids, the best of which were Cattleya King Albert (Parthenia Prince of Wales × aurea), a pretty cream-white flower with a slight pink tint, the lip being rose-coloured with yellow markings; Laelio-Cattleya Figaro (L. Iona × C. aurea), a pretty flower, with nankeen-yellow sepals and petals, claret-purple lip, with bright yellow base; and the new Cattleya Lady Ingram var. alba, with pure-white sepals and petals and deep violet crimson front to the lip.

Messrs. J. and A. McBean, Cooksbridge, staged a group in which were their new Cattleya Thyone McBean's variety (see Awards), two forms of the white strain of C. Lord Rothschild, the white C. Brenda, C. Katie (fulvescens × aurea), a distinct novelty in which the C. Forbesii inherited from C. fulvescens is well shown; some good C. aurea, one being the rose-mottled variety marmorata; two forms of Brasso-Laelio-Cattleya Nola (B. nodosa × L.-C. Callistoglossa), both white, the one sparsely and the other uniformly spotted with purple.

R. G. Thwaites, Esq., Chessington, Streatham, staged a small group in which were a singular Sophronitis cross, presumably with Cattleya Schilleriana; C. Euphrasia, several dark red Odontioda Devossiana, O. Madeline and O. Leeanum.

Messrs. Hassall and Co., Southgate, staged a small group with good Cattleya Hardyana, C. aurea, C. iridescens, C. Iris and C. Sibyl var. Lord Kitchener, the best novelty of the show (see Awards).

Messrs. Flory and Black, Orchid Nursery, Slough, showed the true Cirrhopetalum Rothschildianum, which received a First-class Certificate on October 15, 1895, and was illustrated in the *Gardeners' Chronicle*, November 23, 1895, p. 609.

E. H. Davidson and Co., Orchid Dene, Twyford, showed Laelio-Cattleya Davidsoniae (L.-C. Bella × C. labiata Orion), a very large rosy-lilac flower, with broad claret-purple lip; Cattleya Hardyana Orchid Dene variety, of large size, good shape, and rich colour; C. Harrisoniana alba Snowflake, and the fine yellow Cattleya iridescens aurifera.

R. Brooman-White, Esq., Arddarroch, Garelochhead (gr. Mr. J. Smith), sent a good form of Odontoglossum Aliciae (Edwardii × crispo-Harryanum), with large, claret-coloured flowers tipped with white.

Floral Committee.

Present: H. B. May, Esq., in the chair, and Messrs. Chas. T. Druery, G. Reuthe, Chas. E. Pearson, W. G. Baker, E. A. Bowles, W. A. Bilney, J. W. Moorman, Thos. Stevenson, E. H. Jenkins, George Paul, Edward Mawley, W

Cuthbertson, J. W. Barr, J. F. McLeod, John Green, F. W. Harvey, and James Hudson.

AWARDS OF MERIT.

Lilium Biondii.—A Japanese species nearly allied to L. Leichtlinii, and like that plant it is of graceful habit, bearing a goodly number of smallish flowers on moderately slender stems about 2ft. 6in. high. The deep orange-coloured flowers are copiously spotted down the face of the perianth segments with dark, nearly black spots. Shown by Mr. Amos Perry.

Campanula Norman Grove.—The origin of this variety was not stated, but its habit and appearance suggest a cross between C. pusilla and C. carpathica. The neat tufts of foliage are amply surmounted by pendulous flowers of bluish-violet colour. This should prove to be a valuable free-flowering plant for the rock-garden. Shown by Mr. Grove, Sutton Coldfield.

Aster Amellus King George.—A magnificent blue Michaelmas Daisy, exceedingly floriferous and of medium height. The individual flowers, which were borne in large heads, measured almost 3in. across, and possessed bright yellow centres. Shown by Mr. Amos Perry.

Amaryllis Belladonna speciosa purpurea.—This splendid variety of the popular and valuable Belladonna Lily is an immense improvement on the type. The tall, stout stems bear many-flowered umbels of deep pink flowers. Shown by Messrs. Robert Veitch and Son.

Gladiolus Lord Alverstone.—The most noteworthy point of this variety is the uncommon shades of colour, for the spike is as straight and well-furnished as is the case with all the gandavensis hybrids from this firm. The outer petals are of rich, velvety-crimson colour, which contrasts curiously with the claret colour of the inner petals. Shown by Messrs. Kelway and Son.

Other Novelties.

Besides the Belladonna Lily which received the Award, Messrs. Robert Veitch and Son showed for comparison the type and also flowers of Amaryllis Belladonna maxima, the latter being a very desirable variety. The flowers on a plant of Nerine Coral, which was also shown by Messrs. R. Veitch, were a trifle past their best, but the variety has much more than average merit. From N. Bowdenii a long, large-flowered spike has been obtained, and the influence of N. Fothergillii is seen in the improved form of the flowers. This variety is probably much more hardy than the majority of Nerines.

Messrs. Kelway and Son, Langport, Somerset, showed a magnificent collection of Gladioli, which filled two lengths of tabling. This contribution added materially to the attractions of the show, and was characterised by straight, well-furnished spikes of good flowers. (Silver-gilt Medal.)

Messrs. H. B. May and Sons, Lower Edmonton, staged an admirable collection of stove and greenhouse Ferns in great variety. In the centre of the group a few plants of Ixoras gave a touch of brilliant colour, which served to enhance the value of the Ferns. (Silver-gilt Medal.)

Mr. James MacDonald, Harpenden, displayed seedling lawn grasses growing on his prepared fabric, and also a large collection of flower spikes of ornamental grasses and allied plants. (Silver-gilt Banksian Medal.)

Mr. L. R. Russell, Richmond, contributed a splendid group of Clematis in pots. The large plants were profusely flowered. The specimens of the rich blue variety, Lady Northcliffe, were the outstanding feature of this noteworthy exhibit. In another part of the hall Mr. Russell showed plants of Celosia pyramidalis plumosa, L. R. Russell's strain, which bore shapely "plumes" of good colour. (Silver Flora Medal.)

Mr. C. Engelmann, Saffron Walden, displayed very charming cut Carnations of the best Perpetual-flowering and Perpetual "Malmaison" varieties.

Messrs. B. R. Cant and Sons, Colchester, arranged cut Roses. The large stand of the fragrant variety Juliet was the best we have seen, and the stands of Louise Catherine Breslau and of Rayon d'Or were also very charming. (Silver Banksian Medal.)

Messrs. Dobbie and Co., Edinburgh, showed a collection of Sweet Peas which were of such excellence that it was difficult to realise that the season was practically over and there has been a long period of drought. Of the many varieties, Elfrida Pearson, Jean Ireland, Mrs. Heslington, Hercules, Dobbie's Cream and John Ingham were exceptionally fine. (Silver Flora Medal.)

Messrs. Barr and Sons, Covent Garden, London, displayed many herbaceous Phloxes, Kniphofia Damman, K. brevifolia, such Gladioli as America, White Queen and Czar Peter, Cyclamen neapolitanum album and Colchicum byzantinum. (Bronze Flora Medal.)

Mr. A. Ll. Gwillim, Sidcup, contributed blooms of double-flowered tuberous Begonias of a good strain, as well as a group of hardy border flowers. (Silver Banksian Medal.)

Messrs. W. Wells and Co., Merstham, exhibited herbaceous Phloxes.

Mr. Amos Perry, Enfield, had a very tastefully arranged group of border flowers on a floor space. The Michaelmas Daisy King George, which received an Award of Merit, was very prominent, and in contrast to other varieties. Senecio pulcher, Lilium auratum rubro-vittatum and Lilium Henryi were also shown in good condition. (Silver Banksian Medal.)

Mr. G. W. Miller, Wisbech, included good spikes of Kniphofia Nelsonii major and Montbretias in his collection of border flowers.

Mr. G. Reuthe, Keston, Kent, exhibited several varieties of Michaelmas Daisies and various Alpines. (Bronze Flora Medal.)

Messrs. Wm. Cutbush and Sons, Highgate, made a bold group of hardy perennials on a floor space. Of the very many desirable kinds shown the strain of Pentstemon was especially fine. (Silver Banksian Medal.)

Hardy flowers were also shown by the Misses Hopkins, Shepperton-on-Thames, and Mr. W. H. Simpson, Birmingham. Messrs. Reamsbottom and Co., Geashill, contributed very good St. Brigid Anemones.

Joint Dahlia Committee.

Present: Arthur Turner, Esq., in the Chair. Messrs. S. Mortimer, H. Shoesmith, H. J. Jones, J. W. Moorman, E. Doncaster, A. Bridge, Jos. Cheal, John Green, Reginald Cory, R. W. Wallace, John Dickson, J. T. Bennett-Poë, and Charles Dixon.

Awards of Merit (R.H.S.) and First-class Certificates (N.D.S.) were granted to the following varieties :—

Dahlia Loreley.—A very beautiful decorative variety, of deep Primrose colour; the flowers are borne on long, stout stems.

D. Etoile Rose.—This is a most charming Cactus Dahlia; the soft, flesh-pink flowers have white centres, and show up well on long stems.

D. Stella.—A round, Collerette variety, which has crimson florets and white quills. This and the foregoing were shown by Mr. Chas. Turner.

D. Marguerite Phillips. — A white Cactus variety, in which the broad, slightly recurved, drooping florets give the large blooms a graceful appearance. This and the four following varieties were shown by Mr. James Stredwick.

D. Mrs. Edward Drury.—An exhibition Cactus bloom, which has incurved florets of Indian-red colour.

D. The Swan.—A very large garden Cactus Dahlia, borne on unusually long stalks. The broad, twisted florets are ivory-white.

D. Kismet.—An exhibition Cactus variety, with incurved florets of rosy-magenta colour on a buff ground.

D. Rotifer.—This Pompon-Cactus variety, which is of carmine colour shading to white at the tips of the florets, is of not more than average merit.

D. White Star.—An exceedingly decorative single variety, of Crawley Star habit, but broader in the floret. The pure white of the florets is intensified by the golden stamens. This and the following varieties were shown by Messrs. J. Cheal and Sons.

D. Worth Star.—Another single variety, but of no great merit. The colour is dingy mauve, striped with narrow, whitish lines.

D. Eden.—A Collerette Dahlia of perfectly round shape; the pure white florets and quills are set off by golden stamens.

Competitive Classes.

The Rev. A. Bridge, Worth Rectory, Three Bridges, the only exhibitor, was awarded the first prize of a Silver Cup in the Amateurs' Class for a collection of Dahlia blooms. The flowers, chiefly of Cactus varieties, were exceedingly good, but they were too much hidden by the flowering spikes of grasses which were arranged with them.

In the "Cory" Cup Class the competition was exceedingly good. The first prize was won by Messrs. Carter, Page and Co., London Wall, London, but having won it last year the cup was awarded to the second prize collection, shown by Messrs. J. Cheal and Sons. Messrs. Carter, Page and Co.'s collection contained many excellent blooms, was quite representative, and very attractive. The chief of the Cactus varieties were Arthur Pickard, Amos Perry, Sweet Briar, Star, and Stability. Amongst the many Collerette varieties, Princess Louise, Maurice Rivoire, and Henry Farmer were especially good, as also were the dainty Pompon blooms in the front row.

The group arranged by Messrs. Cheal was very tasteful and well balanced, and although it did not contain so many blooms as in the former exhibit the quality was fully equal. The third prize was won by Mr. J. Walker, Thame.

Non-Competitive Exhibits.

Reginald Cory, Esq., Duffryn, Cardiff (gr. Mr. A. Cobb), sent many delightful single and Collerette "Duffryn Seedlings." (Silver Flora Medal.)

Messrs. Carter, Page and Co. staged, opposite to their competitive group, a large collection of Dahlias, amongst which the Cactus varieties Frances White, Fascination, and Mrs. D. Fleming were splendid. (Silver Flora Medal.)

Mr. J. B. Riding, Chingford, filled a length of tabling with an excellent collection of Dahlias, in which the Collerette varieties were pre-eminent. Star of Montplaisir, Crown Princess Charlotte, Orphée, Madame Poirier, and Diadem are the names of a few that were well shown. (Silver Flora Medal.)

Messrs. J. Piper and Sons, Bishop's Road, Bayswater, interspersed an interesting collection of Dahlias with vases of such hardy perennials as Rudbeckia Newmanii, Phygelius capensis, Statice latifolia, various Heleniums, and Gaillardia hybrids. The Dahlias, which were principally of the decorative varieties, were very bright and fresh.

Messrs. T. S. Ware, Ltd., Feltham, included many Cactus varieties of great merit in their collection of Dahlias; such sorts as Honesty, Scorpion, Critic, Iolanthe, and John Riding were very beautiful. At one end of the Dahlias Messrs. Ware massed quantities of herbaceous Phlox, Heleniums, Delphiniums, Pentstemons, and similar border plants. (Bronze Flora Medal.)

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq., in the Chair. Messrs. John Jaques, A. Bullock, J. Willard, Geo. Kelf, Jos. Cheal, P. C. M. Veitch, Horace J. Wright, A. W. Metcalfe, A. R. Allan, and J. G. Weston.

AWARD OF MERIT.

Himalayan Giant Blackberry. — The sprays shown were grown at Wisley; they bore large numbers of large, deep black, richly-flavoured fruits. The award was to Messrs. Laxton Bros.

Messrs. J. Veitch and Sons, Feltham, showed, perhaps for the last time, one of the magnificent collections of fruit trees in pots which have won our unstinted admiration on so many occasions. Pears predominated, and of this fruit such varieties as Durondeau, Marguerite Marillat, and Louise Bonne of Jersey were laden with luscious-looking fruits. The Plums—Jeffersons, Coe's Violet, and Late Transparent Gage, and the small pots of Negro Largo Fig were all of excellent appearance. (Silver-gilt Knightian Medal.)

A long stretch of table was filled with dishes of Apples and Pears grown at the Society's gardens at Wisley. These fruits, which were gathered from bush trees planted three years ago, were clean, of good size, and first-rate appearance. Besides very many of the standard varieties, lesser known Apples are Winter Majetin, Rambour Papelen, Pitmaston Russet, Nonpareil, Blue Pearmain, Colville Boishunel, and Melon Apple were included in this excellent exhibit.

Messrs. Robert Veitch and Son, Exeter, submitted Peach Golden West, and Apple Devonshire Queen. The Peach, which is a freestone variety, of tempting appearance and rich flavour, was considered by the Committee to be too much like Exquisite. The ribbed, reddish-purple Devonshire Queen Apples were very handsome.

AWARDS TO CHINA ASTERS.

September 8.

At a meeting on September 8 the President and Council approved the following recommendations of the Floral Committee for Awards to the following Annual Asters (Callistephus) tried at the R.H.S. Gardens at Wisley :—

Award of Merit.

No. 34, Comet, shell-pink, shaded white (Barr); No. 90, Giant Comet Ruby (Barr); No. 93, Giant Comet The Bride (Heinemann); No. 146, The Prince, (R. Veitch); No. 147, Toison d'Or (Hurst).

Highly Commended.

No. 1, Aurora (Hurst); No. 35, Comet, snow-white (Barr); No. 36, Comet, pale lavender-blue (Barr); No. 38, Dwarf Paeony Flowered Perfection, black-blue (Heinemann); No. 42, Dwarf Paeony Flowered Perfection, dark scarlet (Heinemann); No. 43, Dwarf Paeony Flowered Perfection, dark scarlet and white (Heinemann); No. 48, Dwarf Paeony Flowered Perfection, rose (Heinemann); No. 56, Elegance, lavender (Cartwright and Goodwin); No. 79, Giant Comet, fiery scarlet—this variety is identical with 90, but it requires further selection (Heinemann); No. 86, Giant Comet, pure white (Heinemann); No. 81, Giant Comet, light blue (Heinemann); No. 95, Giant Comet, white, turning to amethyst-blue (Heinemann); 99, Gloria (Barr); No. 102, Hohenzollern, brilliant rose (Heinemann); No. 119, New Giant White Hercules (Barr); No. 120, New Giant Hohenzollern, shell-pink (Barr); 129, New Yellow Sunlight (Barr); No. 139 Ruby (single) (Heinemann); No. 166, Victoria, carmine-rose (Heinemann); No. 169, Victoria, dark blue (Heinemann); No. 171, Victoria, dark scarlet (Carter); No. 189, Victoria, white, tinted rose (Heinemann); No. 192, White Wonder (Cartwright and Goodwin).

Commended.

No. 44, Dwarf Paeony Flowered Perfection, light blue (Heinemann); No. 39, Dwarf Paeony Flowered Perfection, black-violet (Heinemann).

Obituary.

John Scouler.—The death of Mr. John Scouler, a well-known member of the Glasgow fruit trade, is reported at the age of 61. Mr. Scouler learned his business with Messrs. Simons, Jacobs and Co., and after being a member of the firm of Messrs. Newlands and Thomson established a business on his own account.

LAW NOTE.

BANKRUPTCY STATISTICS.

In a comparative table attached to the report on Bankruptcy Statistics showing the total failures under bankruptcy and deeds of arrangement in regard to particular trades, we find the following information relating to gardeners, florists, and nurserymen :—In 1909 there were 48 failures, with liabilities amounting to £32,764; in 1910 there were 55 failures, with liabilities amounting to £68,144; in 1911 there were 36 failures, with liabilities amounting to £36,374; in 1912 there were 38 failures, with liabilities amounting to £38,088; and in 1913 there were 23 failures, with liabilities amounting to £18,791.

MARKETS.

COVENT GARDEN, September 9.

Cut Flowers, &c.: Average Wholesale Prices

	s.d. s.d.
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— single, per doz. bunches ..	1 6- 2 0
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	0 6- 1 0
— smaller, per doz. bunches ..	2 0- 4 0
— Carola (crimson), extra large	1 0- 1 6
— Malmaison, per doz. blooms	
— — pink ..	5 0- 6 0
Chrysanthemum, Almirante, bronze, per doz. blooms .	0 9- 1 0
— Ashley, pink, per doz. bun...	3 0- 4 0
— Betty Spark, Pink, per doz. bunches ..	6 0- 8 0
— Countess, white, per doz. blooms	1 0- 2 6
Hollycott, Bronze, per doz.	1 3- 1 6
— Martin, yellow, per doz. bun....	3 0- 4 0
— Mercedes, yellow, per doz. blooms ..	1 0- 2 0
— Mrs. Beech, bronze, per doz. blooms ..	0 8-0 10
— Princess, pink, per doz. ..	2 0- 2 6
— sprays, white, per doz. bun...	4 0- 6 0
Coreopsis, per doz. bunches ..	0 6- 0 9
Delphinium, large blue, per doz. bunches ..	3 0- —
Eucharis, per doz.	1 6- 2 0
Gaillardia, per doz. bunches ..	0 9- 1 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 1 6
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus, America, pale pink, per doz. spikes ..	0 6- 1 0
— brenchleyensis, scarlet, per doz. spikes	0 9- 1 0
— Pink Beauty, per doz. spikes	0 6- 0 9
Gypsophila, white	2 0- 4 0
— — double, per doz. bunches ..	6 0- 8 0
Lapageria alba, per doz. blooms ..	1 0- 1 6

	s.d. s.d.
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long ..	0 9- 1 0
— — short ..	0 9- 1 0
— lancifolium album, long ..	1 0- 1 6
— — — short ..	1 0- 1 6
— — rubrum, per doz., long ..	0 8-0 10
— — short ..	0 6 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	10 0-12 0
— special	8 0- 9 0
— ordinary ..	6 0- 7 0
Marguerites, per doz. bunches ..	0 9- 1 0
Michaelmas Daisies, per doz. bunches ..	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Harrisonii, per doz. blooms ..	4 0- 5 0
— Odontoglossum crispum ..	2 0- 3 0
Pancratium, per dozen blooms..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Physalis, per doz. bun.	4 0- 6 0
Roses: per dozen blooms, Bride	0 6- 0 9
— Bulgaria ..	0 9- 1 0
— Frau Karl Druschki ..	1 0- —
— Kaiserin Augusta Victoria	0 6- 0 9
— Lady Hillingdon	0 6- 0 9
— Liberty ..	0 9- 1 0
— Madame A. Chatenay ..	0 6- 0 9
— Melody ..	0 9- 1 0
— Mrs. J. Laing..	0 9- 1 0
— My Maryland..	0 6- 0 9
— Niphetos ..	0 9- 1 0
— Richmond ..	—
— Sunburst ..	0 9- 1 0
— Sunrise ..	—
— White Crawford	0 9- 1 0
Scabiosa, mauve, per doz. bnchs.	2 0- 2 6
Statice, mauve, per doz. bunches..	1 6- 2 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	0 9- 1 0
Stocks, English, white, per doz. bunches	3 0- 4 0
Sweet Sultan, mauve per doz. bnchs.	1 6- 2 0
— yellow	1 0- 1 6
— white	1 6- 2 0
White Heather, per doz. bunches..	0 6- 0 9

Remarks.—The trade this week has shown a little improvement, but the supplies are not so heavy as are expected at this time of the year. Both single and double Asters continue to arrive in good condition. The supply of Chrysanthemums increases daily, and disbudded blooms of white, yellow and pink varieties can be obtained in perfect condition from medium to specimen blooms. The best white flowers for sale in bunches are Roi des Blancs and Cranford White. Sprays of bronze, yellow and pink can be obtained in good condition and prices are very low. The supply of Lily-of-the-Valley is decreasing and prices are rising. Lilium longiflorum and L. roseum are in excellent condition and are selling more freely. A few good Orchids, such as Cattleya, Odontoglossum, Cypripedium and yellow Oncidium, can be had at a reasonable price, but there is not much demand for large quantities of such flowers. There is an abundant supply of cut foliage, such as Asparagus plumosus, Maidenhair Fern, Smilax, Cycas leaves, and many kinds of hardy foliage.

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Carnation foliage, doz. bunches ..	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Lichen Moss, per dozen boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved ..	6 0 —
Smilax, per bunch of 6 trails ..	1 0- 1 3

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated ..	30 0-60 0
Asters, Coloured, 48's, per dozen	3 0- 4 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Campanula isophylla, white, 48's per doz.. ..	10 0-12 0
— — blue, 48's per doz. ..	6 0- 8 0
Chrysanthemum, 48's, per dozen	6 0-12 0
Croton, per dozen	18 0-30 0
Dracaena, green, per dozen ..	10 0-12 0
Erica nivalis, 48's, per dozen ..	15 0-18 0
— — thumbs, per doz. ..	5 0- 6 0
— gracilis, thumbs, per doz. ..	4 0- 6 0
— — 48's, per doz.	12 0 —
Ferns, in thumbs, per 100.. ..	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0

	s. d. s. d.
Ferns, in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz. ..	4 6- 5 0
— — 60's, per doz.	3 0- 3 6
Fuchsias, 48's, per dozen	5 0- 6 0
Geonoma gracilis 60's per dozen..	6 0- 8 0
— larger, each ..	2 6- 7 6
Hydrangeas, pink, per doz. 48's ..	10 0-18 0
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0
— larger, per doz.	18 0-36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz. ..	15 0-21 0
L. longiflorum, per dozen	12 0-15 0
Lily-of-the-Valley	12 0-18 0
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	4 0- 6 0
Palms, Cocos Weddeliana, 48's, per doz. ..	18 0-30 0
— — — 60's, per doz.	8 0-12 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Spiraea, white, 32's per dozen ..	6 0- 8 0
— pink, 32's, per dozen	9 0-12 0

Remarks.—Ferns still continue to receive the most attention in this department, possibly on account of the excellent quality of these plants. Pink and white Ericas can now be obtained, but pink E. gracilis are more plentiful and, in thumb-pots, are selling better. Good specimens of Celosia are obtainable, and although there are more varieties of Chrysanthemums they attract but little attention.

Fruit: Average Wholesale Prices.

	s.d. s. d.
Apples, English dessert, per ½ bush.	1 6- 2 6
— cooking, 1 bush.	2 0- 3 0
Bananas, bunch:	
— Double Ex. ..	8 0-9 0
— Extra	7 0-7 6
— Medium ..	6 0- 6 6
— Giant	9 0- 9 6
— Extra-medium	6 0 —
— Red, per ton ..	£20 —
— Jamaica, p. ton	£15 —
Blackberries, per lb.	0 2- 0 3
Cobnuts, per lb. ..	0 4-0 4½
Damsons, per ½ sieve	1 0- 1 6
Figs, English, per doz.	1 0- —
Grapes: Black Hamburgh, per lb.	0 4- 1 0
— English, Gros Colmar, per lb.	0 6- 1 0

	s.d. s.d
Grapes: Gros Maroc, per lb. ..	0 4- 1 0
— Muscat of Alexandria ..	1 0- 1 9
— Canon Hall, per lb.	1 0- 3 0
Greengages ..	4 0- 6 0
Lemons, Naples, per case ..	12 0-14 0
— Palermo, per case	7 0-10 0
Melons, English ..	1 0- 1 6
— Valencia, per case	10 0-12 0
Peaches, English, per doz. ..	1 0- 6 0
Pears, English, ½ sieve	3 6- 5 0
Plums, English, per ½ bushel ..	1 6- 3 0

Remarks.—Large quantities of dessert and cooking Apples are arriving daily and only low prices are being realised. As there have been no Continental Pears arriving this week the demand for English-grown varieties has increased. There is a less plentiful supply of such varieties of Plums as Victoria and Pond's Seedling, but Monarchs and Diamonds are more plentiful. Peaches, grown both indoors and in the open, continue to be very plentiful and can only be sold at very low rates. The season for Nectarines is practically over. Heavy supplies of all varieties of Grapes continue to arrive daily. There has been a better trade for Melons this week. The supply of Cucumbers is up to the average for the time of year, and large quantities of English, Guernsey, Dutch and Lisbon Tomatos are arriving daily. Mushrooms are still scarce. Cobnuts are exceptionally fine and plentiful this season.—*E. H. R., Covent Garden, September 9, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, ground, per ½ sieve ..	1 0- 1 6
Beans, Scarlet Runner, per bushel	0 9- 1 0
Beetroot, per bushel, long ..	3 0 —
— round	2 0 —
Cabbages, per tally	8 0-10 0
Carrots, per doz. ..	1 0- 1 3
Celery, per bundle	0 8- 0 9
Cucumbers, per flat	4 0- 5 0
Garlic, per lb. ..	1 0- 1 3
Horseradish, 12 bundles ..	18 0-21 0
Leeks, per dozen ..	2 0- 3 0
Lettuce, English, Cos, (per tally 5 doz.).. ..	7 6-10 0
Lettuce, English, round, per box	4 6 —
Marrows, per tally	3 0- 5 0
Mint, per doz. ..	2 0 —

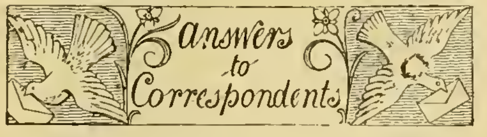
	s.d. s.d
Mushrooms, cultivated, per lb...	1 3- 1 6
— Buttons ..	1 3- 1 6
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per bag ..	5 0- 7 0
Parsley, per dozen bunches ..	3 0- 4 0
Peas, English, bushel	4 0- 6 0
Radishes, per doz.	1 6- 2 0
Sage, per dozen ..	1 6- 2 0
Spinach, per bushel	2 6- 3 0
Tomatos, English, per doz. lbs. ..	1 6- 2 0
— seconds ..	0 9- 1 0
Thyme, per dozen bunches ..	2 0- 6 0
Turnip, English, per dozen bunches	3 0 —
Watercress, per doz.	0 4- 0 6

Remarks.—With the exception of Peas and Cabbages, there is a plentiful supply of all vegetables.—*E. H. R., Covent Garden, September 9, 1914.*

New Potatos.

	s. d. s. d.		s. d. s. d.
Bedford	3 0- 3 9	Kent	3 3- 4 0
Blackland	2 9- 3 3		
Lincoln	3 0- 4 0	Essex	3 0- 3 6

Remarks.—Trade remains slow. Stock in London heavier and arrivals quite equal to demand. Prices about the same as last week. – *E. J. Newborn, Covent Garden and St. Pancras, September* 10, 1914.



Answers to Correspondents

Campanula pyramidalis : *F. L.* The spots are caused by the fungus Ramularia. Spray the plants with either Bordeaux mixture, weakened to half strength, or liver of sulphur. All diseased plants should be burnt or the pest will continue from year to year. Early next season spray the plants with liver of sulphur.

Celery Diseased : *F. K.* Your plants are suffering from Celery rust, Puccinia Apii. Your best plan is to eradicate all the plants as soon as the disease makes its appearance, to prevent germination and the dispersion of the rust. Spray the remaining plants with diluted Bordeaux mixture.—*T.* The specimens sent are not good ones, but it appears that the disease is that described in the answer to *F. K.*

Diseased Figs : *Whumite.* The fruit is affected with Fig rot, caused by Botrytis. This is due to an excess of moisture and too great a contrast between the night and day temperatures. Afford plenty of air early in the day.

Forcing Tulips : *H. S.* In our issue for November 30, 1912, p. 403, you will find full particulars given with regard to the forcing of Tulips, including a list of 19 varieties, the earliest date at which each may be forced successfully, the best soil to use, and how to treat the bulbs after potting.

Gooseberry Tree Diseased : *J. C. G.* English mildew is present, but it would not account for the injury to the twigs, which is probably due to the fungus Botrytis. When the fruit is removed spray the trees thoroughly with Bordeaux mixture, and again in the spring.

Deutzia and Philadelphus : *Lord C.* The hardiest forms of Deutzia are the several varieties of D. crenata, the type itself being a very beautiful flowering shrub, growing 8 feet high and bearing a profusion of white flowers. The varieties flore pleno and Pride of Rochester are quite as vigorous and free-flowering, and the flowers are double. D. Vilmorinae is one of the hardiest of the new sorts, and also one of the strongest growers, making a bush 6 feet high; and the individual flowers are ¾ inch across. The hybrids between D. gracilis and D. discolor purpurascens and other kinds bloom well in seasons when they escape spring frosts. Some of the best are Kalmiaeflora, myriantha, Boule de Neige, campanulata, carminea, and Avalanche They rarely exceed 3 feet in height. Two of the best sorts of tall-growing Philadelphus are P. grandiflorus and P. coronarius. The latter bears more fragrant flowers than the former. The dwarf-growing P. microphyllus is, however, the most fragrant of the Philadelphuses, whilst its progeny, typified by P. Lemoinei, are also very fragrant. P. microphyllus grows about 2 feet high, and the Lemoinei type 3 to 4 feet. Nothing can be done to prevent the Cherry gumming. All wounds should be tarred over and patches of gum may be removed and bare places be coated with tar. There is no immediate necessity for destroying the tree if, with the exception of the gum, it appears to be in moderately good health. It is not likely that there is any connection between the condition of the gummed tree and the diseased tree on a neighbouring estate, though the question cannot be answered with certainty without an examination being made of the two trees.

Names of Apples : *A. W. B.* We regret we are unable to name your Apples, as our rules have not been conformed with. Each Apple must be numbered, either by means of adhesive paper or some other suitable method. The plan sent was quite inadequate, and, indeed, the fruit was unpacked before the plan was noticed. We only undertake to name six specimens for each correspondent at one time. If you will send fresh specimens we shall be glad to help you.

Names of Fruits : *Yellow Peach.* In sending Peaches or Nectarines for identification it is necessary to include specimens of the foliage, as the character of the leaf glands is a help in determining the variety. You should likewise state whether the flowers are large or small, this being another important point. The two specimens you send us were slightly bruised on arrival, and without the leaves and description of flowers it is not possible for us to identify it with certainty, but it is most likely to be Yellow Alberge.—*J. G.* 1, Cox's Orange Pippin; 2, Fruit not developed; 3, Beauty of Kent; 4, Waltham Abbey Seedling; 5, Warner's King; 6, Beauty of Kent; 7, Domino; 8 and 9, fruits not developed; 10, Lord Suffield; *R. D. G.* 1, Kirks; 2, Bush Plum; 3, Prince of Wales; 4, Prune Damson; 5, Pond's Seedling; 6, Prince Engelbert; 7, no fruit received; 8, Yellow fruit, Jefferson; 9, Dark-red fruit, Pond's Seedling.—*H. E. C.* Apple Lord Suffield.—*A. H. P.* Williams' Bon Chrêtien.

Names of Plants : *P. C.* 1, Cupressus Lawsoniana argentea variegata; 2, Thuya dolabrata; 3, Cryptomeria japonica elegans; 4, Cedrus deodara; 5, better specimen required; 6, Cedrus atlantica. The specimens were all very poor bits, and it was difficult to name them with certainty.—*J. C. G.* Lonicera sempervirens.—*F. H. Sutton, Bonington.* Unable to identify specimens sent.—*Whermite.* 1, Skimmea japonica; 2, Dryas octopetala; 3, Ceanothus Gloire de Versailles; 4, Send when in flower; 5, Thermopsis fabacea; 6, Dianthus nitidus.

Nuttallia cerasiformis Diseased : *C. H. H.* Silver-leaf, Stereum purpureum, is present in the specimens sent, and there is no known cure for this disease.

Nymphaea scutifolia : *Old Reader.* The plant in question should be left where it now is for another month at least. During that time continue to remove all yellow and decaying foliage. Probably at the expiration of that time any tendency towards an active growth will have ceased. Then it would be advisable to lift it from its present position out-of-doors and if possible place it in a tub of water in a temperate house, *i.e.*, a house where the temperature would not fall below 50° F. After a time the foliage will, in all probability, decay completely. Then, if it be more convenient, the tuber may be taken out of the water and stored during the winter in dry sand, with an occasional damping of the sand. During this time a temperature ranging from 50° to 60° will be expedient. In fact it can be kept in the same way as Caladium bulbs, with an average of 5° less in the temperature. Leave it thus until early in March next, then remove it from the sand, clear the tuber, and pot into a pot somewhat larger than the tuber itself. Then place it in a temperature (in water) of from 60° to 65°. In a few weeks signs of growth should be apparent. When this becomes active a larger pot will be needed. N. scutifolia, N. capensis, N. coerulea and N. stellata are all varietal forms of the same species. The two first-named are considered somewhat hardier than the other two.

Peach Trees : *Private Gardener.* You do not state what is the width of the border, neither is there information as to whether there is any brick or clinker rubble on the chalk bottom for drainage purposes. The omisson to provide proper drainage may have contributed to the unsatisfactory state of your eight-year-old trees. Lift the trees carefully, clear out all the old soil, and clean down to the chalk bottom. Then place 3 inches of brickbats or clinkers, broken finely, over the border foundation, and cover with thin turves, placing them grass-side downwards. When this has been done form a wall of turves, from 9 to 12 inches wide, and from 1 to 2 inches in thickness, immediately inside and the full length of the 24-inches high plank enclosure, which will promote a more equable moisture and temperature in the border when the trees are transplanted in the new compost. The compost should consist of the best loamy soil obtainable, old lime rubble, wood ashes and horse droppings at the rate of one barrowful of each to five barrowfuls of loam, and one bushel measure of fresh soot, the whole being well mixed before forming it into a border the full depth of the confined space. The surface of the border thus formed should slope gently down to the front of your lean-to house. When planting, spread the roots evenly over the soil, cutting away any damaged ones with a sharp knife. Cover the roots to the thickness of 3 or 4 inches with the compost a few inches above the outside limits of the border, as the fresh and loose soil will subside to that extent within three or four weeks. For that reason the branches of the trees should at first be only suspended loosely from the trellis, so as to admit of all subsiding together. Finish the border with a good surface dressing of horse droppings, with a good watering to settle the soil about the roots. If the work can be carried out without delay it will be better for the trees, as it will enable the roots to push into the new soil before they shed their leaves naturally in October. When doing this work the roots should be wrapped in damp cloths as soon as they are removed from the soil, and the trees shaded heavily before and after being transplanted, and be syringed overhead two or three times a day on bright days.

Scent Making : *P. S. P.* The flowers you mention are hardly such as would pay to grow for perfumery purposes, except in very large quantities. The perfume of Wallflowers and Sweet Peas as sold by perfumers is largely artificial, being made from a mixture of synthetic chemical perfumes and essential oils of different kinds. Wallflowers, Sweet Peas, Mignonette, Violet, Jasmine and some other flowers cannot be distilled so as to give up their perfume unaltered. The odour has to be extracted by the process of enfleurage, that is, adding the fresh flowers to melted fat until it has been saturated with the odour of the flowers, and then extracting the odour from the fat with cold alcohol, or by the distillation of the flowers in vacuo with petroleum ether. Both processes require knowledge and skill. You will find the processes explained in the issue of the *Perfumery and Essential Oil Record* for December, 1913, and a list of the principal manufacturing perfumers in the July number of the same journal. The best firm to supply suitable distilling apparatus at a reasonable cost is probably J. Dale, Ltd., 44, Raymouth Road, S.E. Lavender oil is at present so little profitable that it is found advisable by small growers to sell the flowers freshly dried, or in market bunches, if there is no convenience for drying them. Messrs. Potter and Clarke, 60, Artillery Lane, London, E.C., deal largely in dried flowers used for sachets, such as Lavender, Roses, etc. The Editor of the *Perfumery and Essential Oil Record*, 48, Southwark Street, would be able to give you an opinion as to the most profitable perfume plants to grow in your particular locality, if you gave him indications as to exposure, soil, and possibility of irrigation. For some essential oils, such as Peppermint, if of good quality, there is an unlimited demand and a few medicinal plants such as Henbane occasionally pay very well indeed to grow; but like Hops, Henbane is a speculative crop. In view of the probable failure of competition from German, French, and Austrian supplies next year it may even pay to cultivate Belladonna. Foxglove, Camomile, insect powder plant, and some other plants.

Tailless Currants : *Miss Pick.* We do not know the variety of Black Currant which you mention. Kindly send specimens.

Communications Received.—A. J. G., Calne—A. G.—A. L.—Whermite—A. Buchanan—Hepburn—A. P.—A. H—Mrs. Hope—W. G. P.—Thrin—H. D.—H. W. W.—T.—Enquirer—H. E. C.—E. W. F.—Old Reader—P. S. P.—A. G.—W. A J.—J. D K.—J. C. G—C. J. W.—F. L.—J. B. D.—W. T.—C. P. R.—W. H. D—L. J. O—R. H.—S. A.—J. R. J.—G. B. B.—F. W. F.—W. M.—S L. B.—A. O.—J. E.—C. R.—Hurst and Son—J. N.—J. F., Ltd.—J. M

THE

Gardeners' Chronicle

No. 1,447.—SATURDAY, SEPTEMBER 19, 1914.

CONTENTS.

Alpine garden, the .. 200
Arsenate of lead as an insecticide 207
Book, Notice of—
  Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy 211
Calceolaria, a pretty strain of 206
Cheiranthus linifolius .. 207
Foreign correspondence—
  Bread from bulbs .. 201
Holboellia latifolia in Jamaica . .. 201
Lemoine's, M., nursery on the Franco-German frontier 201
Linum maritimum and Glaucium leiocarpum 207
National Dahlia Society .. 206
Orchid notes and gleanings—
  Dendrobium Hookerianum 200
  Miltonia vexillaria .. 200
  Odontoglossum aspidorhinum 200
Perpetual - flowering Carnation Society .. 206
Plant notes—
  Flowers and fruit at the Newry nurseries 202
Rhododendrons for the San Francisco Exposition 206
Rose Fortune's Yellow 206
Societies—
  Horticultural Trades' Association 208
  Royal Horticultural (Scientific Committee) 208
  Royal Scottish Arboricultural .. 209
  Scottish Horticultural 210
South African plants in autumn 204
Torquay public gardens 199
Trees and shrubs—
  A point in acclimatisation 208
Vacant land, the cultivation of 206
Vegetables 202
Vegetable show at Manchester 209
War items 205
Wasps attacking Dahlia stems 207
Week's work, the—
  Flower garden, the .. 202
  Fruits under glass .. 202
  Hardy fruit garden, the 203
  Kitchen garden, the 203
  Orchid houses, the .. 202
  Plants under glass .. 203

ILLUSTRATIONS.

Gardeners enlisted for the war 206
Torquay public gardens, views in .. 199, 200, 205, 207, 208
Rockery in nature, a 201

TORQUAY PUBLIC GARDENS.

THE mild character of the climate which prevails in the south-western county of Devonshire permits of the cultivation of many exotic plants that are seldom to be seen out-of-doors in this country. But of all the spots in that picturesque county, none is situated more favourably than Torquay from the point of view of the gardener desirous of cultivating the less hardy species of plants. The town facing south is exposed to the full sunshine, whilst at its back rise steep, high hills that securely shut out north and east winds. On previous occasions we have referred to some of the more important gardens in the Torquay district, and more particularly to the garden attached to Duncan House, formerly the residence of the late Dr. Hamilton Ramsay. In the issue for November 14, 1903, details were given concerning a large number of tender plants which succeed in that garden. For instance, in company with Trachycarpus excelsus, the hardy Palm, there were growing Phoenix canariensis over 5 feet in height, and Corypha australis, whilst around the Palms were Citrons and Oranges, Hedychium Gardnerianum, Desfontainea spinosa. Cordyline Banksii, Camellias, Eucomis, Cordyline australis, Abutilons, Crinum MacOwanii, and others. Further, in our issue for October 20, 1906, Dr. Ramsay stated that Phoenix canariensis was still doing well after being planted out for sixteen years; Livistona chinensis was thriving well; and amongst other species succeeding satisfactorily were Corypha australis, Cocos australis, Chamaerops humilis, and a species of Dicksonia.

The visitor to Torquay no sooner arrives in the town than he becomes conscious of the fact that most of the gardens contain plants unfamiliar to the general public, thus the work of acclimatisation, which may be said to have been pushed to its furthest limit in the garden of the late Dr. Ramsay, has affected the appearance of the gardens throughout the district. Our present intention is not to refer in detail to any private garden; but, on the contrary, to give a few particulars of the public gardens of the town, of which our representative, Mr. W. J. Vasey, has obtained some very charming photographs, which we reproduce.

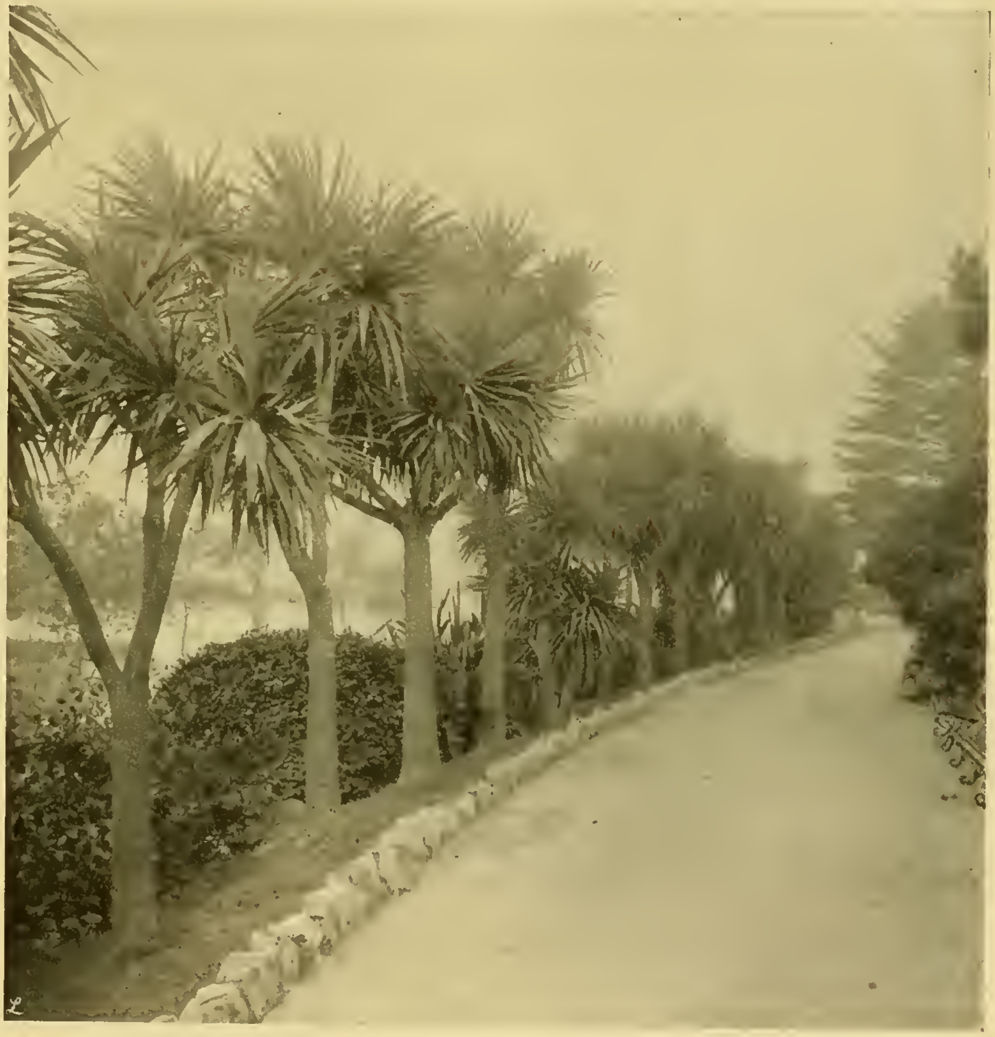


FIG. 77.—CORDYLINES IN THE TERRACE GARDEN, TORQUAY.

It may be said by way of explanation that the Gardens we shall enumerate belong to the Corporation of Torquay; they are under the management of Mr. J. B. Dyer, who has been the Head Gardener to the Corporation for the past thirty-three years, and during this period the present gardens have been laid out. What are known as the Terrace Gardens are the most important, and they occupy the site of advantage, for they stretch for nearly a quarter of a mile along the Torbay road adjacent to the sea front. From the visitor's point of view, the striking features of the terrace gardens are the numerous specimens of Cordyline australis and C. indivisa, many of the latter exceeding 20 feet in height, though all of them were raised from seeds sown by the present gardener. In some places they form avenues, the trees being planted at a distance of about 9 feet (see fig. 77). Agave americana succeeds splendidly in these gardens. The plants are very large, and have been in their present situation for twenty-two years. There are very fine specimens of Chamaerops excelsa and Phoenix canariensis (in the same position for ten years, and doing extraordinarily well); and in a shady place, where the direct rays of the sun scarcely penetrate, is a grand group of white Crinums. These Crinums have not been disturbed for the last sixteen years, yet they flower abundantly every season. Asparagus plumosus has grown out-of-doors here for the past eight years, and variegated Phormiums, tender species of Genista, many Fuchsias, and other plants which live out-of-doors during the winter may be seen. Overhanging one of the pathways is a very fine specimen of Eucalyptus Globulus, which has been planted twenty-eight years. It is now upwards of 70 feet in height, and the diameter of the trunk at 14 feet from the ground where the first branch occurs is 6 feet. On the opposite side of the path is a very fine specimen of Arbutus Unedo, popularly known as the Winter Strawberry, and a row of Cordylines separates the gardens from the roadway. At night, when the road is illuminated, the trees present an attractive, though very unusual appearance. The Cordylines flower in June, and in the present year almost every specimen had produced huge sprays of flowers. The inflorescences may be so much as 5 feet long and 2 or 3 feet through. They have a wonderfully striking effect coming from the crown of each specimen, and being drawn a little to one side by the great weight of the flowers. Before the flowers are quite open they present a peculiar shade of brownish red, which is not only unfamiliar, but so attractive that one turns again and again to admire the effect, but the tiny flowers are white and so fragrant that they fill the air with perfume. We need not refer to the more common features of the terrace garden, as, for instance, the beds which are planted each season with the usual summer plants. Indeed, the Pelargoniums and Fuchsias, and other plants of the kind that were put out in May merely for summer effect appeared to us incongruous amongst so many acclimatised plants; there is little doubt but that the beds might easily be made to serve for more interesting plants, whilst at the same time contributing as now to the general floral display.

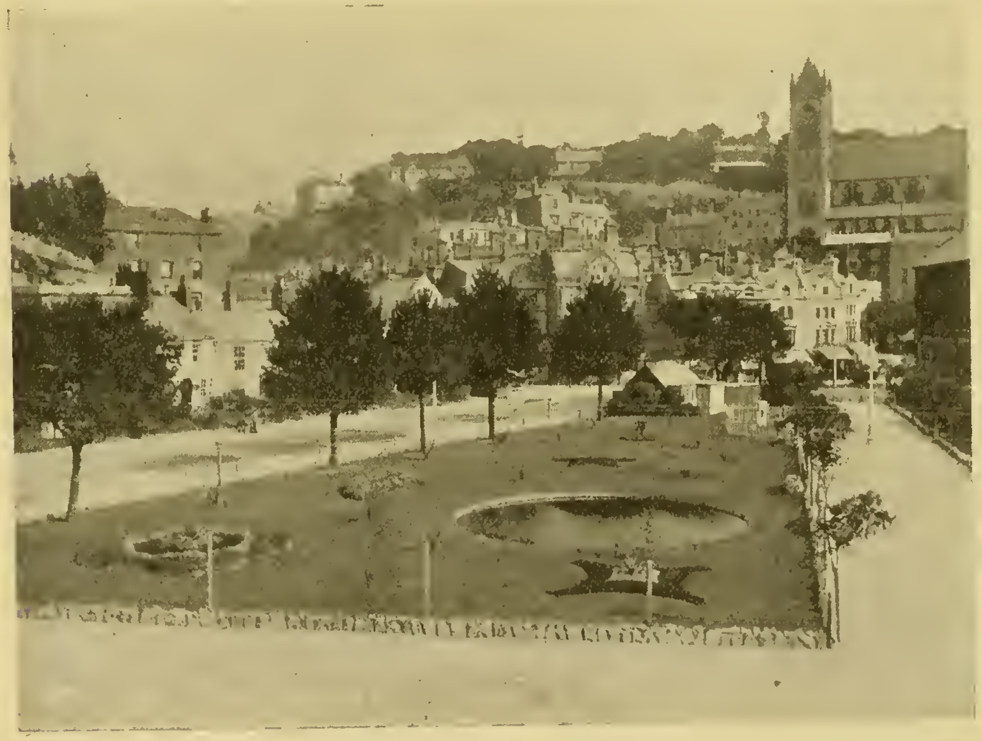


Fig. 78.—Torquay public gardens.
A new garden leading from the Strand to the water edge.

The Princess Gardens.

On the opposite side of the road are the Princess Gardens, which extend from Torbay road as far as the harbour, and from the promenade pier on the West to the new pavilion on the East (see fig. 80). In the centre of this garden is a handsome fountain, with flower beds of various shapes cut in the turf which surrounds it. This sunken oval garden of geometrical design is a favourite with visitors, and is brilliant with flowers all the year round. Rising in stately beauty are groups or fine single specimens of Cordyline indivisa, with many beds just now ablaze with gold and silver variegated Pelargoniums, Coleus, Begonias, Paul Crampel, scarlet, and Queen of Belgians, white, a very effective contrast. Around the fountain are some fine clumps of Phormium tenax, and groups of Bambusa Metake. About two years ago some new gardens were laid out between the Strand and the new pavilion (see fig. 78).

The Torwood Gardens.

Away from the sea-front and a short distance along the valley are situated the Torwood Gardens (see figs. 82 and 83). They lie at the entrance to the Babbacombe road, in a very sheltered position, protected on all sides except the south. In the centre is a lake bordered with irregular stonework and raised beds, whilst small islands of rockwork rise from the water, the rockwork being planted with suitable species. This year the pink and white Acacias have flowered profusely. Babbacombe, about two miles from the town, is situated on the hill, and therefore is more exposed to the winds both from the sea and land. There is also an open space near the railway station; it is known as the King's Garden, and contains a lake of some size, supplied by a natural stream and spanned by two rustic bridges.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM HOOKERIANUM.

Flowers of this beautiful Dendrobium showing interesting variation in colour and form are sent by Mr. J. Davis, gr. to J. Gurney Fowler, Esq., Brackenhurst, Pembury. The blooms are 3½ inches across, the lighter form being Buttercup yellow, the broad, heavily-fringed lip having a dark reddish, chocolate-coloured blotch on each side with orange-red lines at the base; the darker bright orange colour, with claret-red blotches on the lip. The flowers are produced in drooping racemes of six to ten blooms, and are certainly the most beautiful of the section. A form named "Fowler's Variety" has the petals as well as the lip furnished with a deep, broad fringe, the filaments being branched as in D. Brymerianum. The flowers are normal in structure with the exception that the petals are broadly ovate and deeply fringed instead of plain edged and oblong acute as in the type. In colour it is light orange, with dark claret blotches on the sides of the lip, which has some red lines at the base. It is a remarkable and evidently constant variation, the arrangement of the fringed petals being as in Dendrobium Harveyanum, but the flowers are much larger and more showy.

D. Hookerianum was discovered by the late Sir Joseph Hooker in the Sikkim Hills in 1848, and afterwards in the Assam Highlands by Captain Williamson in 1868, but was not flowered in cultivation until 1870. It is often called D. chrysotis in gardens.

ODONTOGLOSSUM ASPIDORHINUM.

Several sprays of this elegant and rare Odontoglossum are sent by Mr. W. H. White, Orchid-grower to Elizabeth Lady Lawrence, Burford, Dorking, who gives the following particulars:—"The plant, then a small imported piece, was obtained in 1895. It always thrived with us, and in 1896 an Award of Merit was conferred on it by the Royal Horticultural Society. The plant from which the spikes were taken has been in bloom for six weeks, and whilst in flower it was used in the dwelling house for a fortnight. It bore forty-five spikes, with an aggregate of about 500 flowers, all open at the same time and making a most beautiful object. It is specially useful for table decoration, being very light and graceful, although the individual flowers are small for an Odontoglossum. For some years the plant has been growing in coarse Osmunda fibre, and it keeps in fine condition."

The remarks fully bear out the statement of the late Consul F. C. Lehmann, who discovered the species on the eastern declivities of the Western Andes of the Cauca, Colombia, altitude 2,200-2,500 metres, and described it in the *Gardeners' Chronicle*, September 28, 1895, where he says that it is beyond question the most floriferous Odontoglossum. The smallish, tufted plants often bear thirty spikes, and, moreover, the pseudo-bulbs generally bear two spikes, and continue to produce spikes on the old bulbs, a character not known in other Odontoglossums. The sepals and petals are pale yellow, blotched with red-brown and the labellum white with violet spotting.

MILTONIA VEXILLARIA.

A grand specimen of Miltonia vexillaria flowering in Messrs. Jas. Cypher and Sons' nursery, Queen's Road, Cheltenham, bears ten spikes, two of which have twelve flowers each. It is of the large-flowered type, and not the small autumn-flowering variety rubella. From the end of April this year Messrs. Cypher have not been without flowers of Miltonia vexillaria. Other specially noteworthy Orchids in bloom there include Stauropsis lissochiloides (Vanda Batemanni) with two fine spikes; Laelio-Cattleya elegans Turneri, with a strong spike of twelve blooms, the labellums being of an intense magenta-red colour; Phalaenopsis Sanderiana, with a spike of twelve blooms; a new form of Laelio-Cattleya bletchleyensis with clear white sepals and petals; the elegant white Oncidium incurvum album, with two spikes; the handsome Cypripedium Daisy Barclay, with three flowers; and Cattleya Angela, with a spike of five flowers.

THE ALPINE GARDEN.

A ROCKERY IN NATURE.

The Lias formation, on the broad stretches of which the fertility of this country so largely depends, does not afford the best opportunity for rock and Alpine gardening. Its soils are too heavy and clayey, damp and sticky in winter, hard-baked and cracking in summer, and the stone that it provides, though limestone, is by no means ideal; they lack the weathered ruggedness of the mountain limestone, and the gravel and stone-dust make a mixture that is too pasty.

Hence I was agreeably surprised to stumble on a natural rockery on the Lower Lias (see fig.

79), at once charming and instructive, brilliant with flowers, and showing that balance between visible stone, short turf, dwarf shrubs, and dwarfer rock plants, that is so pleasing to the eye.

The site was facing south-east, on the steep, grassy side of a coombe close to the sea. The space covered by the rockery proper was small; grass hardly found a place in this stony area, which consisted of cliffs of stratified rock, from 2ft. to 3ft. high, with narrow paths and miniature screes of broken stone and gravel above and below them. The brilliant colour of this stony portion was chiefly (but not wholly) due to two plants, Sedum acre and Thymus Serpyllum; stray Rock Roses from the outlying portions contrasting with the deeper yellow of the Sedum, and broad, fragrant beds of Hippocrepis comosa, the dainty Horseshoe Tufted Vetch (a plant that is far too little grown) flanking the outskirts. Closer inspection revealed the Bee Orchis (Ophrys apifera) and rosy spikes of Orchis pyramidalis. Much-dwarfed and wind-clipt shrubs (chiefly Sloe and Gorse) crept Cotoneaster-like over the bare cliffs: a natural flagged walk was half-hidden by Thymes, some plants of which were smooth-leaved and others downy enough to pass for the lanuginous variety of gardens. The variety among Sedum acre was amazing; in sun-scorched screes, where only this plant could maintain itself, it had dwarfed iron-red leaves and stems and deep yellow flowers, whilst cooler sites showed more luxuriant, green-leaved specimens. No plants could withstand the drought of some of the vertical cracks in the upright cliffs, whose nakedness was clothed by hanging masses of Thyme and Sedum, that found root-hold in the horizontal layers of soft shale that occurred between the strata. Coarser plants seldom occurred in the stony area, but the bold foliage of a colony of Helminthia echioides (Ox-tongue) was noticeable, and a solitary Teasel (Dipsacus sylvestris) displayed young, spear-like leaves and the gaunt, dead flower-stem of last year's plant.

The action of the weather on the cliffs gave a sense of newness, from the constant chipping off of flakes, rather than a rugged, worn appearance, and the general effect gave one to think that he who has only newly-quarried stone to deal with in the rock-garden need not despair. The varied sizes of the stones on the screes and gravelly portions, and their tumbled disorder, drove home the fact that our artificial "moraines" and screes of uniform, machine-crushed gravel are far too trim. But most striking of all was the dwarfing effect of these screes on plant life. We have been inclined to grow our rock plants in too rich a soil, and thus to promote a gross and unnatural luxuriance; and perhaps the "moraine" tendencies of to-day will not only enable us to grow difficult Alpines, but will also bring easy growers back to their true dwarf character.

Wherein lies the secret of the love of plant-life for limestone? There are the palpable and admitted lime-haters, but how many of our most beautiful native plants are confined to chalk and limestone districts, and the health and "kindness" of vegetation generally on calcareous soils does not appear to have been thoroughly explained by the agricultural chemist.

The following list contains most of the plants occurring on the natural rockery; many were on outlying portions where there was more soil. The short grass below the rockery was yellow with Rock Roses (Helianthemum vulgare).

Helianthemum vulgare, Sedum acre, Thymus Serpyllum, Euphrasia officinalis, Iris foetidissima, Erythraea Centaurium, Myosotis collina, Helminthia echioides, Hippocrepis comosa, Orchis pyramidalis, Ophrys apifera, Campanula glomerata, Euphorbia Paralias, Euphorbia exigua, Hieracium Pilosella, Geranium columbinum, Poterium Sanguisorba, Brassica nigra, Anagallis arvensis, Ononis arvensis, Ulex europaeus, and Prunus spinosa. *Harold Evans, Llanishen, Cardiff.*

A CELEBRATED NURSERY ON THE FRANCO-GERMAN FRONTIER.

The accounts of severe fighting in the neighbourhood of Nancy and the bombardment of the quiet town itself will cause gardeners in this country to wonder what fortune has befallen the world-renowned nursery founded by the late Victor Lemoine. Nancy, a French town situated near the German frontier, is known to many horticulturists, chiefly for the nursery which has supplied the world with some of the best floral novelties over a period of years. I well remember my feelings of astonishment when some time since M. Lemoine was good enough to send me a list of the principal plants distributed by the firm since 1862, so great was the number of novelties and so striking their average merit. In that year the principal novelty was Clematis lanuginosa candida. It is impossible here to give a list of these novelties, but it may be remembered by some that the first double-flowered Pelargoniums of the zonal-leaved type were obtained by Lemoine in 1866. Since that time improved varieties, not only of the double-flowered section, but also these with single flowers, have been introduced from time to time; two single-flowered varieties at present amongst our most popular sorts being Paul Crampel and Maxime Kovalevsky. The last-mentioned variety is remarkable for its distinct orange shade. Decorative Pelargoniums from this source have been numerous, and among the many varieties of the Ivy-leaved section is that variety which is certainly the most popular of any, namely Galilée, which is grown by hundreds of thousands in the market nurseries.

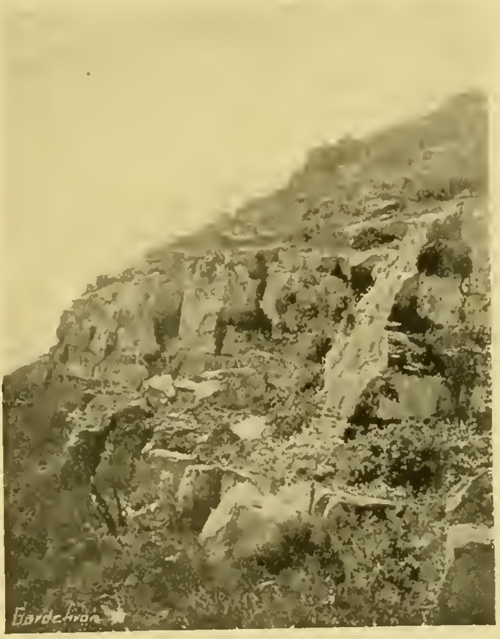


Fig. 79.—A NATURAL ROCKERY ON THE LOWER LIAS FORMATION.

The pretty little Philadephus which was distributed in 1883 was soon employed for hybridising purposes by Lemoine, and the first hybrid from this parentage, namely, Lemoinei, was distributed in 1888. Since then many varieties have been raised at Nancy, insomuch that Nancy hybrids now form a group of summer-flowering shrubs of great value in the garden. Lemoine's efforts to hybridise Deutzias have proved not less successful, especially the hybrids from the Chinese species, which have given us a distinct race which is greatly appreciated no less in the flower garden than in the forcing-house and conservatory. The first of M. Lemoine's hybrid Lilacs, named after himself, Syringa Lemoinei, was sent out so early as 1878, and ever since that time hybrids of merit have been distributed from the Nancy nursery. In Hydrangeas, too, Lemoine has been successful. In recent years he has crossed the two shrubby Paeonies, P. lutea and P. Moutan, the result being a very handsome salmon-buff-coloured hybrid named La Lorraine (see fig. 127 in *Gardeners' Chronicle*, May 3, 1913, p. 296). Readers will scarcely need to be reminded that Gladioli have engaged the attention of the firm, and there are now distinct sections of Gladiolus known as Lemoinei and Nanceanus; both races originated in this nursery.

To M. Lemoine belongs the honour of having raised what is undoubtedly the most popular variety of Begonia in cultivation, Gloire de Lorraine, a variety which he raised from a cross between B. socotrana and the white-flowered B. Dregei, the hybrid being distributed in 1893. Two years previously the variety Corbeille de Fen was distributed, and it may be recalled that M. Lemoine was the first to raise the double-flowered tuberous Begonias, which he sent out in 1874.

This list might be extended, but I will conclude by mentioning a few exceedingly popular plants with their date of introduction: Hydrangea paniculata grandiflora, 1866; Abutilon Boule de Neige, 1872; Montbretia crocosmiaeflora, 1882; numerous hardy Fuchsias, 1886; various hybrid Astilbes, distinct forms of Anemone japonica, and various Weigelas, including the variety Abel Carrière, sent out nearly forty years ago, but still one of the best pink-flowering varieties in cultivation. *W. T.*

THE WEST INDIES.

HOLBOELLIA LATIFOLIA IN JAMAICA.

On p. 350, Vol. LV., under the heading of "Plants Under Glass," there appears a note on Holboellia latifolia. I am curious to learn the colour of the flowers of this plant when cultivated in England.

The *Flora Brit. India* gives the colour as "purplish green," and that is true as regards the flowers borne on plants at the altitude of 6-7,000 feet, and in the neighbourhood of this town. I have noticed, however, that plants at an altitude of 9-10,000 feet have flowers either quite white or faintly rose-coloured, making a much more effective show. Apart from the difference in altitude, and consequently in temperature, I know of no condition which should cause this difference of colour, both localities being about equal in the matter of sunlight, forest shade and atmospheric and precipitated moisture.

I should also like to learn whether the plant fruits under cultivation. *G. H. Cave, Curator, Lloyd Botanic Gardens, Darjeeling.*

FOREIGN CORRESPONDENCE.

BREAD FROM BULBS.

It may be of interest to readers of the *Gardeners' Chronicle* to know that an enprising baker in this country has been making experiments with flour made from Tulip bulbs, and has baked bread composed of two-thirds wheat flour and one-third Tulip meal. The result is said to be satisfactory, but the bread has been sent for analysis to the Government laboratory, Wageningen, before being put on the market. The variety of Tulip is La Reine, which is cultivated in hundreds of thousands by the smaller growers, and is thus exceptionally cheap. Another variety also used is the Rose Gris-de-Lin, also very extensively cultivated. It will be interesting to know the food value of the Tulip. Rabbits, rats, and mice are greedily fond of the bulbs, and there seems no reason why they may not find a use as an article of food. *H. R., Delden, Holland.*

VEGETABLES.

TOMATO GOLDEN SUNRISE.

This variety is a golden form of the popular Sunrise variety. Like the red variety of the same name, it is an exceedingly prolific cropper, and suitable alike for growing under glass or in the open. I can strongly recommend Golden Sunrise as a good yellow variety, for not only is it a free cropper, but the quality of the berries is excellent.

LATE PEAS.

It is seldom that there have been so many failures with late Peas in all parts of the country, the trouble being no doubt due to the long period of drought and the disease commonly known as "streak," which affects the plants in the same manner as streak of Sweet Peas. Growers should note varieties which so far have proved immune to the disease. In these gardens we have grown this season a large number of varieties, and nearly all have been failures, the most notable exception being Autocrat. This variety possesses a robust constitution, and when liberal treatment is afforded the plants and they are not crowded in the rows, Autocrat seldom fails in any locality, even in the hottest seasons. It would be interesting to know the experiences of other growers with their mid-season and late Peas this season. Up to August 17 we had plenty of good Peas, but from that date onwards had it not been for the variety Autocrat our supply of late Peas would have failed us. *Edward Beckett, Aldenham House Gardens, Elstree.*

PLANT NOTES.

FLOWERS AND FRUITS AT NEWRY.

The following notes on flowering and fruiting plants at present in season may be of interest :—

Agapanthus caulescens. — This species is flowering very well this year. It has large, handsome, blue flowers and bold, broad foliage. It is deciduous, and the buds are pushed up from the ground, forming a stem 6-9 inches high, from which the leaves develop.

Clethra alnifolia and C. a. paniculata.—The variety is distinct, owing to its brownish pedicels and large spikes of flowers, but it possesses the delightful fragrance of the species itself.

Cotoneaster acuminata, and C. a. bacillaris.—These are two distinct trees with purplish-black fruits.

Desfontainea Hookeri and D. spinosa.—D. Hookeri has paler foliage than the better known D. spinosa, and the stems are also pale in colour and not tinged with purple, as in the other species. The flowers are brighter and more freely produced.

Genista Aetnensis (the Mount Etna Broom).—This is a beautiful, autumn-flowering shrub that is not grown so freely as it deserves.

Lobelia Morning Glow, or, as it was re-christened, Gloire de St. Anne's, is the best of the scarlet cardinal flowers.

Pyrus aucuparius fructo aurea.—This tree is a wonderful sight now it is covered with golden berries. The variety nanus is a most distinct tree. It has a congested columnar growth, and its dark green foliage, amongst which the bunches of dazzling, scarlet berries nestle, make it a unique object.

Pyrus (Cormus) foliolosa.—This is a small tree, which is distinctly pretty, whether in foliage, flower or berry.

Pyrus (Malus) edulis.—A wonderfully free-fruiting crab. The fruits become much brighter in colour as they age.

Rosa nitida. — One of the most charming species of Rosa, whether used as an edging or in the rock garden. The leaves are just turning colour and the effect is much enhanced by the brightly-coloured hips.

Tamarix hispida.—A beautiful, pink-flowering shrub that does best in sandy soils.—*G. N. Smith, Daisy Hill Nursery, Newry.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Thrips and Scale Insects.—Close observation is necessary to prevent infestations of scale and thrip. Careful sponging is the best way to remove scale insects, using a small quantity of soft soap in the water. Care must be taken to prevent the leaves from being scratched, which may happen by the careless use of brushes or by the presence of grit in the sponge. Thrips can be checked by fumigations and regular sprayings. Black thrips are liable to become troublesome in autumn. They generally lay their eggs on the underside of the leaves, and they are not easily removed, but directly they begin to hatch out a moderately strong insecticide can be used advantageously, the eggs themselves being proof against it.

Vanda coerulea.—This extremely beautiful Vanda is now producing its flower-scapes, and the colour of the flowers when they expand will vary according to the locality in which the plants grow and the cultural conditions afforded them. In the neighbourhood of London and other large towns where the light is more or less obscured, this Vanda usually produces flowers of a very washy blue, and if a little shade is employed the blue is almost lost and the flowers become practically white. In the pure atmosphere of the country, however, provided the plants are exposed well to the light and air, the flowers develop that beautiful blue shade that makes this species so incomparably attractive. Humid conditions should be maintained until the time the flowers are expanded.

Epi-phronitis Veitchii.—Plants of this bigeneric hybrid that flowered in the early summer will now be producing roots from the young growths. If any need re-potting, this work should be carried out at the present season. It is convenient to grow several together in pots or pans, which should be drained to about two-thirds their depth. A suitable compost is one consisting of fibrous peat, broken leaves and chopped Sphagnum-moss in equal proportions, with plenty of broken crocks and charcoal intermixed. Let this be made moderately firm about the base of the plant, and when re-potting has been done, place the plants on the stage in the intermediate house, where they will obtain considerable moisture. The stock may be increased by taking off the growths that are usually produced from the side of the new pseudo-bulbs.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Pines.—On warm, fine days the stock plants should receive a plentiful supply of air. During damp weather the plants are likely to suffer if kept in too close or humid an atmosphere; therefore where there is not sufficient piping to heat the structure properly without hard firing reduce gradually the damping overhead and only resort to it on fine, warm days when the sun is sufficiently powerful to dry up the superfluous moisture before nightfall. Where heating arrangements are efficient still continue to damp overhead to assist the plants in keeping free from insect pests. Those plants which are not yet properly rooted, either in or out of pots, should be watered sparingly; those that are well rooted may have a regular supply of water, but in lessening quantities as the winter approaches. Successional plants should be kept in a temperature of 65°, but with sun heat it may be allowed to rise to 75° or 80°. Pineapples now require a very moderate amount of water, and less in quantity as the season advances. Air should be admitted freely upon every favourable occasion in proportion to the temperature of the pit.

Selection of Fruit Trees for Planting.—In the choice of trees all possible care is necessary, for to have a tree that does not give satisfaction is a great disappointment. Choose those that are vigorous and healthy in appearance, and if they are grafted or budded, select those that have been worked on young stocks. Grafts and buds are sometimes put into old and stunted stocks, and it is very rare that such succeed. The stems should have smooth, clean, shining bark. Some are inclined to reject young trees that are strong and luxuriant, forgetting that by their removal the luxuriance to which they were subject before is checked, and that after they are again planted and pruned, they will prove healthy and fruitful. Trees that are mossy, or have a rough and wrinkled bark, or slender growth, or are affected by canker which shows itself in the young wood, generally two or three inches above the graft or bud, should be rejected. Whether the tree be a Peach, Nectarine, Cherry, Apricot, or Plum, should any gum appear on the stem, or around the graft or bud, it should be discarded. Select if possible trees with only one graft or bud upon each stock, for when there are more the tree can seldom be brought into proper form. Some prefer maiden trees, which are trees of one year from the working, so as to have them under their own care and management, but as a rule it is advisable to furnish the wall or trellis more speedily with trees of three or four years' growth, obtainable at most nurseries. It is essential to have a tree that is well furnished with young wood in every part of it, particularly Peach or Nectarine trees, for when either of these have, by injudicious pruning, been brought to that state of having little or no young wood for two or three feet from the centre of the tree, it is with great difficulty and loss of time that it can be afterwards furnished with a proper supply. It is particularly desirable therefore to have a tree that has been properly trained for at least three or four years, suitably furnished with young wood in every part, for the shoots that are made during the early years of training is what afterwards forms the main branches of the tree.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Herbaceous Perennials.—Such herbaceous perenials as have growth coming away from the base may now be divided, re-planting them in permanent positions or starting them in the reserve garden. Such plants include Helenium pumilum, Pyrethrum, and Statice. As these plants will commence to produce new roots directly after re-planting, specimens which do not show such basal growth should be left alone until spring, as they would not make sufficient roots this autumn to prevent them from being lifted out of the ground by the action of frost in winter.

Seedlings of Half-Hardy Plants.—The present is a suitable time to give a shift to certain half-hardy plants, at present in the seedling stage; such, for instance, as Humea elegans, Hollyhocks, and certain species of rock garden and herbaceous border plants, that make better progress when given the shelter of a cold frame than they would if placed out-of-doors from the start. All these plants should be grown in cool conditions, and though they appear to make but little growth it will be found that during the winter they will fill the larger pots with roots. I have found that many out-door plants that come true from seed are improved if they are propagated occasionally by seed rather than division, selecting for further cultivation the best habited plants and those with the best coloured flowers.

Winter Bedding.—Look well after the Wallflowers, Silenes, Forget-me-nots, Aubrietias, Polyanthus, Arabis, and similar plants, exposing them well to the light and preventing any overcrowding, for if they are allowed to become crowded their hardiness will be impaired, therefore thin any out that appear to need more room.

Propagating Summer Bedding Plants.—Secure cuttings of all kinds of summer bedding plants, and carry out the propagation in cool conditions. If this is done the results will be far better than can be obtained from late propagation and the use of fire-heat. These remarks refer to Calceolarias, Pentstemons, Veronicas, Verbenas, Heliotropes, Lobelias, Pelargoniums, Ageratums, and others.

Kniphofia (Tritoma).—The Kniphofias have been very fine this year. If any of the plants appear to be too thick on the ground, lift some of them, divide them into single crowns, and plant them in the reserve garden for a year. The same remarks apply to Valerien, Verbascum, and Crambe.

Chrysanthemums.—The summer-flowering Chrysanthemums are now giving a first-rate display of bloom. Madame C. Desgranges, Goacher's Crimson, and Précocité are the best of the early-flowering varieties. Before they pass out of flower see that the labels are in proper condition, renewing any that need it. A little later sufficient plants must be lifted and placed under shelter for furnishing cuttings for cultivation next season. Attend to the disbudding of later varieties, and partially lift with a spade the very late ones, so that they will not experience much check when they are lifted and potted up for flowering indoors.

Bulbs in Grass.—The sooner these are planted the better, especially all varieties of Narcissus, and any bulbs that bloom earlier than the Narcissus.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote,
Eastwell Park, Kent.

The Planting of Fruit Trees.—It is advisable to prepare the ground ready for the planting of fruit trees. If various sites are available choose one where there is a deep, fertile loam, and natural good drainage, but in cases where the site is already determined, and the natural soil is not so good as is desired, mix sufficient fresh compost with the top spit to make it fairly rich and friable. This compost should consist of good loam with a liberal addition of burnt earth or wood ashes, with mortar-rubble, or lime. Where stone fruits are to be planted the quantity of lime should be greatest. For Apples, Pears, Cherries, Plums, Apricots, and Peaches, it is not advisable to dig animal manures into the soil except in special circumstances. As a rule, young fruit trees grow very vigorously in the early stages, and manure added to the soil is apt to encourage this tendency to produce gross and unfruitful wood. If the soil is considered sufficiently good for Apples and the other fruits mentioned above, trench the ground, thoroughly breaking up the bottom spit, but on no account bring up a bad sub-soil to the surface or bury the top spit, the latter always being kept near the surface to put round the roots when planting. If the position is not naturally well drained, steps must be taken to drain the land. as the trees will not thrive in ground that is liable to become water-logged in the winter. Clear out all perennial weeds and leave the soil rough for the present, thus allowing the weather to have full play upon it. If the ground is prepared now, it will be in excellent condition when the time comes to plant the trees. When preparing the ground for the planting of Raspberries, Strawberries, Gooseberries, Currants, and Loganberries, the case is somewhat different. These all fruit on the previous season's growth, and very strong growth is necessary if full crops are expected. For these fruits the ground should be well enriched by adding plenty of manure when trenching.

Filberts and Cobnuts.—In common with the majority of fruits and berries, there is a splendid crop of nuts this season, and they should be gathered before they begin to fall. See that they are dried well before storing, taking care that rats and other vermin cannot get at them.

Walnuts.—These are ripening earlier than usual this season, and should be harvested for storing. It is usually most convenient to allow Walnuts to fall from the trees, when they can be collected and cleaned, and partially dried before storing them in sand, jars, or tubs in a cool cellar. If they are kept in too dry a place, the kernels will shrivel and deteriorate rapidly.

Apricots.—When the fruit has been picked remove the late growths and attend to any further pruning that is necessary. After pruning, dispose the wood thinly over the wall space. If the weather continues dry, give the roots a good soaking with the garden engine. Mark any trees that are making gross growth for root-pruning next month.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby,
Knowsley Hall, Lancashire.

Greenhouse Climbers.—As the days become shorter there is a greater need for all the light possible on the greenhouse stages. Climbing Fuchsias may have their growths shortened and other climbers that are trained to the rafters, including such species as Swainsonia, Bignonia and Tacsonia thinned. Heliotropes that were cut back some time previously are making growth and showing flower. Plants of Luculia gratissima should have their shoots regulated so that their flowers show to the best advantage. Pot Fuchsias are now over, and any that are in the conservatory may be removed out-of-doors, where the wood will ripen better if the supply of water is gradually decreased until the leaves fall, when the plants may be stored in a well-ventilated structure free from frost. Camellias should be examined with a view to cleansing the plants of any pest that may be found on the foliage. They require all the air possible at this season.

Cleansing the Structures.—Take every opportunity that can be obtained for thoroughly cleansing the structures and interiors of the plant houses so that they will be in a proper condition for housing the numerous plants at present out-of-doors.

Violets in Frames.—Select pits or frames for the winter Violets, choosing those facing to the south and in which fire-heat is available, as damp is very detrimental to a successful crop of flowers. In the bottom of the pit some coarse material should be placed to act as drainage, then fill in with a compost, nine inches in depth and consisting of loam, three parts, leaf mould and manure from a spent mushroom bed, one part each, adding a little soot and Thomson's manure to the surface soil, and making the whole moderately firm. Lift each plant carefully with a spade, keeping as much soil as possible on the roots, and place them on wooden trays or boxes to convey them to the frame, where large holes, capable of holding each ball of soil, should be made, and the roots planted so that each specimen will just touch its neighbour. After the planting has been completed, give a good soaking of water, and shade the plants for a few days, until they get over the check, when the shading and lights may be removed, and the lights only replaced in wet weather. Syringe the plants twice daily and remove any brown leaves from them. If red spider is troublesome, syringe the plants with nicotine as previously directed. It has been found that cuttings rooted in the autumn make better plants than those taken from the frames in the spring, therefore it is advisable to take short-jointed cuttings from stock plants now. Dibble them into frames containing sandy soil, water them and shade them from bright sunshine until they are rooted, when plenty of air may be afforded them on favourable occasions.

Lachenalia Nelsonii.—The bulbs of this useful winter and spring-flowering subject are now thoroughly rested. Shake them from the old soil and grade them, planting six first-size bulbs in a 5½-inch pot or putting them two inches apart if grown in baskets. Use a gritty compost and stand the plants in a cold frame until November, when they may be placed on a greenhouse shelf, introducing batches into heat as required.

General Remarks.—The dry, bright weather early in September has been beneficial to the ripening of the winter-flowering plants in the open. Secure all Chrysanthemums to stakes and tie the shoots regularly. Prepare suitable houses in which to place Chrysanthemums, Azaleas, Ericas, Cytisus, Salvias, Camellias, Solanums, and similar plants. For some time after they are removed indoors they will require all the air possible. Aphis must be carefully watched for and destroyed. Bouvardias should not be left in the open much longer, but should be removed to a dry, airy house for about a month, when if removed to an intermediate house they will open their flowers; if manure water is given them it should be very weak, as the fine roots are easily damaged by strong manures. If the growths are straggly, place a stake near the centre and sling the shoots to it.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of
Haddington, Tyninghame, East Lothian.

Cockchafers.—The cockchafer grub has appeared among young Cabbages and Lettuces, half-grown plants of the latter having been destroyed as well as those recently transplanted. The grubs are not difficult to destroy if one follows them up where they have been feeding and with a broad label turns them up to the light. Frequent stirring of the ground is also a means of prevention, grub-eating birds picking up those unearthed, thus helping to decrease the numbers. It is necessary to make good all blanks made by these voracious creatures, which happily appear only at long intervals of years.

Manuring Crops.—Recently-thinned Turnips and young Carrots will progress all the better for a slight dressing of superphosphate of lime, followed in a few days by another of sulphate of ammonia. Both materials should be sown a few inches from the plants, in lines on each side, where the roots in a very brief space of time are enabled to lay hold of them. Where soot is available that may be used, but it is rather slow in taking effect, and either poultry or pigeon manure is to be preferred. Late planted Leeks will also be advantaged by similar dressings, but those more advanced may be left to themselves.

Potatos.—As the result of a few wet and mild days, the foliage of one or two late varieties has been destroyed by mildew only the bare stem remaining. To prevent the plants being affected with worse Potato disease, I have had the stems removed, by twisting them round until they came away, leaving the tubers unmoved; the crop may now be safely left for another month. Any tubers that were torn out of the soil were, of course, removed, and those exposed had soil from the furrows thrown upon them. Seed tubers of earlier varieties which have been left in the open to "green" should be placed in a frost-proof building.

Spinach.—We have three batches of this valuable vegetable coming on for winter and spring use, the earliest being forward enough to furnish plants for consumption. If the thinnings are not required for the kitchen the plants should be thinned now. The old-fashioned prickly seeded Spinach is still grown in many gardens for winter use, and this variety need not be thinned to the extent of the larger-leaved varieties, which are quite as hardy and give a larger crop. As there may be losses from maggot in the later sowings do not thin these at present unless the seeds were sown very thickly. Do not apply fertilisers to any of the batches, but stir the soil deeply between the rows as long as the weather continues fair.

Beetroot.—This crop should now be ready to lift. I prefer the ground to be rather moist, as I then find the roots come away more freely, and if the root is moved round when raising it, the danger of breakage is considerably lessened. Remove the foliage by breaking it off with the hand, which is better than using a knife or a hook for the purpose. The roots should be removed without delay to a shed or root store, and at once embedded in sand, which is the best way of preserving them. If the ground occupied by the crop is dug or trenched immediately, the leaves should be incorporated with the soil.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, SEPTEMBER 21—
Nat. Chrys. Soc.'s Executive and Floral Coms. meet.
TUESDAY, SEPTEMBER 22—
Roy. Hort. Soc. Coms. meet. (Special Vegetable Show). (Lecture at 3 p.m. on "Trees of Cambridge Botanic Gardens.")
WEDNESDAY, SEPTEMBER 23—
Nat. Dahlia Soc. Show at R.H.S. Hall, Westminster.
THURSDAY, SEPTEMBER 24—
Manchester and North of England Orchid Society.
Watford Branch B.G.A. General meeting.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 55.5°.

ACTUAL TEMPERATURES:—

LONDON, *Wednesday*, September 16: Max., 64°; Min., 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, September 17 (10 a.m.): Bar. 39; Temp. 61°. Weather—Showery.

PROVINCES, *Wednesday*, September 16: Max. 62° Dover; Min., 51° Glasgow.

SALES FOR THE ENSUING WEEK.

MONDAY—
Sale of Orchids at York Place, Todmorden.
MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.
MONDAY AND WEDNESDAY—
Bulbs, and Lilies, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30.
WEDNESDAY—
Bulbs, Liliums, Palms and Plants, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 3.

South African Plants in Autumn. In these times of anxiety and stress, which will try the pluck and endurance of Englishmen as they were seldom tried before (writes Mr. H. J. Elwes, from Colesborne, Gloucestershire), one turns to the garden as almost the only relaxation from care. During the lovely month that has just passed I have often thought how much our gardens and greenhouses owe to South Africa, the home of more beautiful autumn-flowering plants than is any other country, or, if I except Asters and Chrysanthemums, than all other countries combined.

First the Gladiolus, for the garden varieties of which the season has here been too dry, though Saundersii, princeps and some other hardy species left in the ground are exceptionally fine. How strange it is that G. primulinus, which I believe is found in the tropical valley of the Zambesi, should be quite hardy here, while Gloriosa Rothschildiana, said to grow in the same places, is supposed to require stove conditions to do well. Some seedlings of the latter which I have raised are, however, flowering in a cool house, where I shall try them again next year. Next, perhaps, in general utility are the Kniphofias, which are unusually floriferous this year, some of the greatest beauties among them being seedlings of Kniphofia Nelsonii, and though the early flowering species like Northiae and caulescens are now over, yet others like primulinus will, if frost does not cut them off, continue in flower till late autumn.

Montbretias again are wonderfully fine when one remembers that the garden forms have sprung from such a relatively indifferent plant as M. Pottsii, whilst Sparaxis pulcherrima, where it thrives, in moist, rich soil, is one of the most graceful plants known to me. Schizostylis coccinea again is throwing up its spikes, and Antholyza paniculata, planted on the edge of a pond where it gets ample moisture, is now a far finer plant than it ever was in the dry border, where I used to grow it until I learnt better at Mount Usher. The same is true of Agapanthus, which do not have a chance to develop their beautiful flowers, ranging from pure white to deepest blue, when starved as they often are in pots and tubs. It is well, however, to keep some in reserve inside during the winter, for when the long, black frost which we have not had here since 1895-6 comes it will probably destroy these as well as many other plants which of late years we have treated as hardy. Watsonias again are infinitely more robust and floriferous where it is possible to grow them in the open ground, and may be hardier than we think, but I have not seen them in perfection except in the gardens of the south-west. Anomatheca cruenta and its charming white variety are now over, but seeding freely, and seem as hardy as a Crocus. The tall white spikes of Galtonia candicans are in full beauty, and this fine bulb seems to have an iron constitution, which enables it to thrive and increase anywhere. It is all the more strange that not a single tree, native of South Africa, is so far as I know able to live out-of-doors in England. What again can now be more stately, beautiful and floriferous, where they have room to thrive in a deep, warm border against a greenhouse, than Crinum Powellii alba, C. McOwanii, and its numerous forms? Already the splendid spikes of Amaryllis Belladonna and its hybrids and varieties are pushing up their fat noses in a similar situation, and will be the pride of the garden for a month or more.

When we go into the greenhouse again, we see South African plants making a greater show, and to me affording more pleasure than any others. Disas, it is true, are over, and though the species are reputed difficult to grow, yet Disa luna, a hybrid raised by Messrs. Veitch, is an exception, and one of the most satisfactory plants I ever purchased, as it increases fast and never fails to flower. But now we have the first spikes of that lovely and much neglected old plant Vallota purpurea. Why is it that professional, and even the most careful and skilful gardeners usually fail to grow this most glorious of all greenhouse bulbs, whilst cottagers in their windows often succeed with it to perfection? I believe that one of the secrets is, as that wonderful gardener Dean Herbert long ago suggested, that the plant wants more water and heavier soil. I found a pot with a bulb as big as a Pear standing in a washtub outside one of my cottages recently, and acquired it with joy. Now it has a truss of 7 flowers 8 inches across. I am really inclined to offer a challenge cup for the best specimen pot of Vallota at the R.H.S., to see if that will put professional gardeners on their mettle, for there are many varieties of Vallota, and some of the seedlings raised by Mr. Nix, of Truro, are lovely, though he tells me that since his old gardener retired, he can no longer grow them so well as formerly. Will some one in South Africa tell us the conditions under which this plant grows at home? for I cannot recall any information on this point. I have been more successful with a hybrid raised here by crossing Vallota with a good form of Gastronema sanguinea, which seems to have a better constitution than either of its parents; though, like them, it does not like disturbance, and wants a drier resting season near the glass on the topmost shelf of an early vinery, with exposure to sun and air. The flowers are nearer in shape and colour to Vallota than to Gastronema, and the bulbs make offsets freely, so that I have plenty to spare.

Haemanthus, Brunsvigia and Cyrtanthus are all beautiful but neglected South African bulbs, unknown to many good gardens, but easy enough to grow, and infinite in their variety. Lastly, the Nerines are just pushing their first flower-spikes, and from the present time to the end of November will provide a feast of beauty, and variety of colour, which few people who have not seen my collection realise. Why they have been so little grown is to me a mystery, but people are beginning to realise that they have no equals in their way if they get only reasonable attention.

I will not speak of Ixias, Babianas, Tritonias and the beautiful spring and summer flowering Gladioli, which do not thrive in my limy soil, and require warmer winters and more genial springs to grow outside, but Ixia viridiflora, Ixia longiflora, Homeria collina, and Babiana rubro-cyanea are four species of such unusual colour and beauty that they are well worth pot cultivation. And there are many other lovely species among the Irideae, Liliaceae, Amaryllideae, and Orchideae, which, though they require greater care and are often shortlived in cultivation, when they do flower repay one well for the time and trouble. Many South African bulbs have been lost and cannot now be obtained, as there seem to be no collectors there who will take the trouble to look for them, and, like the numerous species of Erica and Pelargonium, they are not, and perhaps never will be, popular plants like Freesias and those I have mentioned.

Queen Alexandra and the National Rose Society.—The following letter from General Sir Dighton Probyn has been received by Mr. Charles E. Shea, President of the National Rose Society: "Marlborough House, September 11.—Dear Sir,—I have to acknowledge the receipt of your letter of the 9th inst. forwarding for submission to Queen Alexandra an open letter to her Majesty's address, together with a cheque for 50 guineas, a contribution from the National Rose Society towards Queen Alexandra's Relief Fund. Both letter and cheque, as requested, I submitted to the Queen, and I write now by her Majesty's command to thank you, and, through you, the Council of the National Rose Society, very sincerely for the handsome donation voted by your Council to be placed at Queen Alexandra's disposal. You will see from the official receipt, which I enclose, that Queen Alexandra has sent the cheque for fifty guineas to the Soldiers' and Sailors' Families Association, an association of which her Majesty is president, and is deeply interested in the great work it is doing.—I remain, Dear Sir, Yours faithfully, D. M. Probyn, General Comptroller to H.M. Queen Alexandra."

War Items.—A correspondent (*A. C.*) writes somewhat apprehensively on the possible effects of the war on the gardening profession. He points out that many of the most capable and enterprising youths are enlisting, and others who do not feel able to volunteer are leaving their posts to avoid the coercion on the part of employers. We are not able to share the apprehensions of our correspondent, and even though we did share them we should still be among the first to applaud the splendid response on the part of gardeners to the national call to arms. We recognised from the outset that the task before us was a heavy one, that great sacrifices and great efforts would be required, but we recognised also that the object for which we are fighting is worth our last drop of blood and the last coin of treasure. We concur with our correspondent that coercion on the part of employers is to be deprecated. So long as we have a volunteer system no individual ought to let his zeal outrun the limit of peaceful persuasion; but, at the same time, it is only human to respect most those men who, regardless of all personal considerations, spring to arms at the call of their country. Our correspondent would perhaps readjust his views if he were to see with his own eyes the effects of the present war on the peoples of France and Belgium. Upon them has fallen the brutal blow; their houses, left defenceless by the departure of the menfolk to the colours, have been rendered desolate. Though we may detest war, and though we are conscious of the evils which follow in its train, this is no time for foreboding. The rôle of those who are too old to fight is to teach the young why we are fighting, and to help those who are most grievously afflicted. Of the young gardeners who have offered themselves for the service of their country many—as we pray—will return, and we shall find that they will resume their avocations and pursue them all the better because of the uplifting influence of their knowledge that they have acquitted themselves like men.

—— We have pleasure in sending you a list herewith of those of our employees who are at the Front, or who are at present under training in camp for foreign service or home defence—all under promise from us to do our best to retain their places for them at the end of the war. The total to date is twenty-four, being some 25 per cent. of the males on our staff between the ages of 19 and 30. Many are trained men, as, owing partly to the fact that our Mr. James Kelway was for many years in command of the Langport Company of the Territorials (Somerset Light Infantry), volunteering has always been fairly popular with our people. It is a matter of deep regret to Captain Kelway that he is now precluded from serving. *Kelway and Son.*

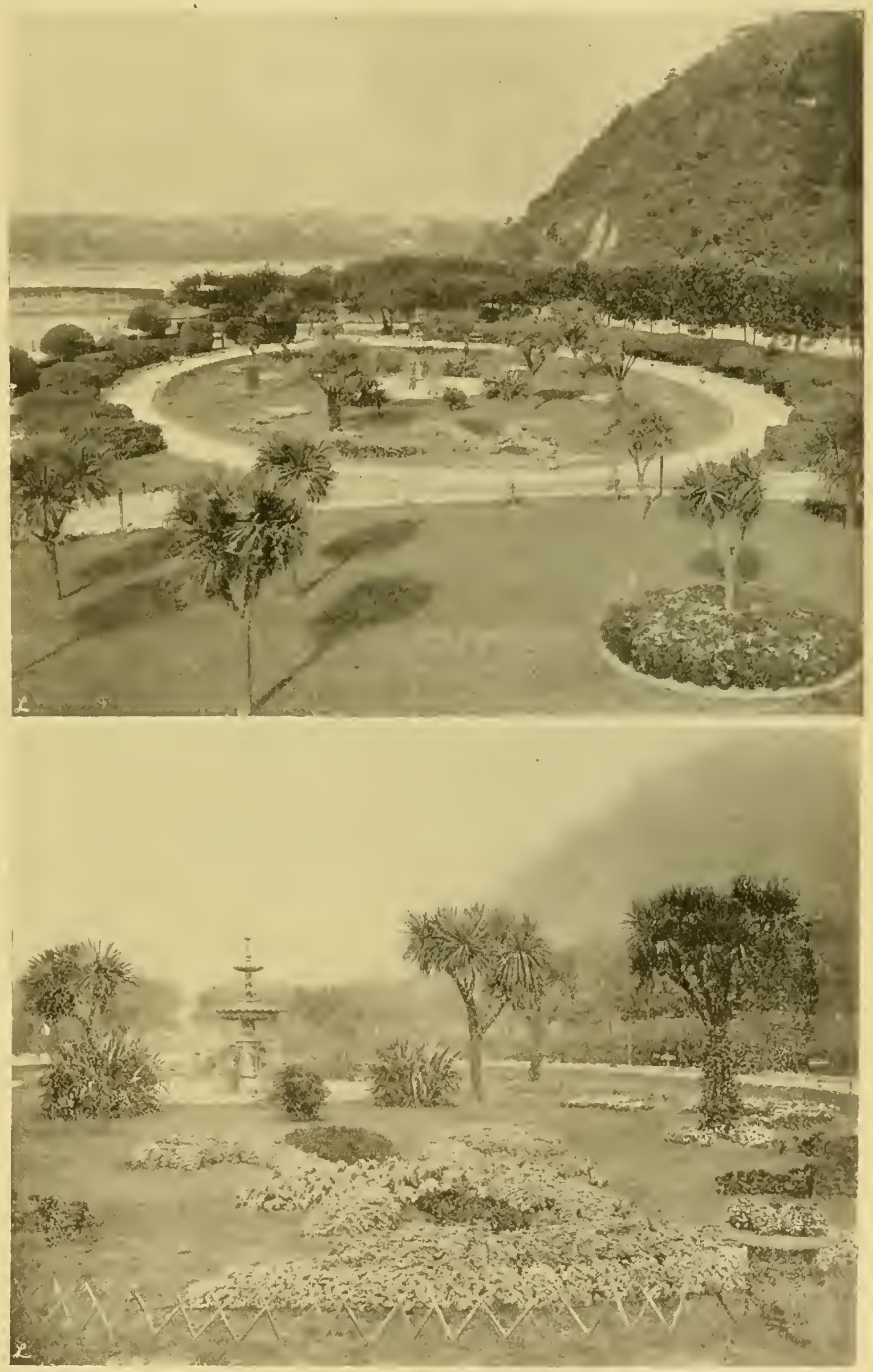


Fig. 80.—views in the princess garden, torquay.
(See p. 199.)

—— At a time like the present, when all classes of society are anxious to do something for the Empire, I should like to appeal to the generosity of my fellow-gardeners. There are now in London four general hospitals dedicated to the use of the Territorial Forces, that voluntary line of defence whose patriotism has hitherto saved us from the necessity of conscription. These hospitals are anxious to obtain plants and flowers, so that a bright and cheerful atmosphere may be maintained in the wards, where pain is bound to be paramount at this unhappy time. It occurs to me that exhibitors at the R.H.S. Shows at Vincent Square might like to send some part of their exhibit, either plants, cut flowers, or fruit, to these hospitals at the close of the day, and that amateurs and nurserymen as well might care to join in this really charitable object. I should be pleased to make all arrangements for collection and distribution in London, if intending donors would communicate with me, either at Balls Park, Hertford, or at 34, Eccleston Square, S.W., and as regards country contributions I would send the addresses of the four hospitals in question to enable parcels to be sent direct. *B. S. Faudel-Phillips, Balls Park, Hertford, September* 15.

—— In a crisis like the present the Council of the National Rose Society hopes that amateur members will allow it to point out that orders for Rose plants during the present autumn and coming winter will be especially welcomed by the trade growers, and will also help to prevent the threatened lack of employment in their nurseries. *Edward Mawley, Hon. Secretary.*

—— I have been called up for duty with the National Reserves, having volunteered at outbreak of hostilities, and am lying under canvas at Aldershot, where I have been for over a week. Our duties there are furnishing guards for military purposes and guarding prisoners of war. I have managed to get a week-end pass, so am able to square things up in the garden. I have today been looking at our Apples, which are by far the best lot we have ever had. *Wilmot H. Yates (head gardener, Rotherfield Park, Hampshire).*

—— We English are notoriously slow to adopt the ideas and practices of other nations, but history shows that we have from time to time incorporated those which refugees have brought here. The Lombards, French Huguenots, and Flemings are imperishable examples. The Flemings and French are with us again as refugees, and it might be to our mutual advantage if we could borrow ideas from them, and, while assisting some of them to earn their own living, could learn from them some of their crafts. At this moment, when it is clear that food production should be one of the great cares of the nation, we should do well to remember that the Belgians and French are pastmasters in the art of intensive cultivation, the growing of Beet, etc., and from them we might learn valuable lessons of how to work our country in smaller holdings than now exist, how to give employment to more persons on the land, and how to produce ourselves much produce that we now import. When they have had time to recover from the awful shocks which they have suffered it might be possible to obtain some idea of their various trades and, under proper supervision and restrictions, create for and give them employment, which would assist them to provide for themselves, relieve them from the terrible thoughts which must assail them in their solitude and enforced idleness, and enable them to impart to us some of the knowledge which they have, and which we so lack. Could this be done they will probably leave an unforgettable mark on English country life, and will confer a further benefit upon the nation which gladly gives what hospitality it can. *Herbert S. Stoneham, Royal Automobile Club.*

—— There are numbers of Rose-growers who have quantities of Rose blooms to spare now that the shows are over. May I suggest that they present to their nearest town or city a quantity for sale in order to augment the National Fund? I may say that a lady in Southend volunteered to sell 2,000 blooms which I offered for this purpose. The sanction of the Mayor was obtained, and some scores of young ladies vied with each other in selling them. The blooms were quickly disposed of, and another thousand was sent in, with the result that a sum of £90 was realised. *Walter Easlea, Eastwood, Leigh-on-Sea.*

—— The Rose-growers of Leicester recently presented the Mayor with 40,000 Roses, which were sold by a large number of women for the Prince of Wales' Fund, £254 being realised.

—— Mr. J. L. Veitch, youngest son of Mr. Peter Veitch, of the Exeter Nurseries, has been gazetted Captain in the 7th (Cyclists) Batt. Devonshire Regiment.

—— I send you a photograph (see fig. 81) of six of our gardeners who have enlisted for the front. The photograph was taken just before I motored them to the station. After the war we hope to have them all back again in these gardens. *G. B. Blackwell, Woodgreen Park Estate, Cheshunt, Herts.*

Fig. 81.—six volunteers from woodgreen park gardens. mr. blackwell, head gardener, is seen at the right of the group.

Perpetual-Flowering Carnation Society.—The committee of this society met in London last week under the chairmanship of Mr. J. S. Brunton. It was decided that arrangements be made for the annual show to be held at the R.H.S. Hall on December 2. Horticultural societies in the provinces are invited to write to the secretary, Mr. T. A. Weston, Floradale, Orpington, for particulars of affiliation. The following new variety has recently been registered by the society:—Tokio, seedling, mauve, with cerise base; especially useful for outdoor culture. Raised by Messrs. Young and Co.

National Dahlia Society.—I shall be grateful if you will announce that the committee of the National Dahlia Society has arranged with the Royal Horticultural Society to hold its exhibition and conference at the R.H.S. Hall, Vincent Square, Westminster, on Wednesday, September 23. The R.H.S. tickets will admit Fellows to the Show, as will the tickets issued for the Crystal Palace Show. The public will be admitted at 12 noon. The papers to be read at the Conference are "The Dahlia in America," by Mr. J. Harrison Dick; "Dahlias for Park and Garden," by Mr. J. Cheal; and "The History and Development of the Dahlia," by Mr. Jas. Stredwick. *J. B. Riding, Secretary.*

A Pretty Strain of Calceolaria.—A short time ago Messrs. Hurst and Son were good enough to show us some specimens of a new Calceolaria named Cotswold Hybrid, which has been raised from a cross between C. Clibranii and a variety of the herbaceous type. The plants grow about 2½ feet high, and are very freely flowered, the inflorescences being much branched. The habit is similar to that of C. Clibranii, and the value of the new strain is to be found in the more varied colouring of the flowers. This ranges from clear lemon-yellow through gold to light bronze and deep and light browns, whilst in some cases the flowers are spotted as in the herbaceous varieties. There is little doubt but that those who have proved the undoubted good qualities of Clibranii will welcome the novelty for the decoration of the conservatory and cool greenhouse.

Rhododendrons for the San Francisco Exposition.—Messrs. R. Gill and Son inform us that they have received an order for the planting of the grounds of the Panama Pacific International Exposition to be held at San Francisco, California, next year. As many as 7,000 plants are ordered, including 100 of the well-known variety Cornubia; these plants being 6 feet high and 5 feet through. The specimens are said to be well budded and full of blooms.

Rose Fortune's Yellow.—Mr. R. A. Rolfe has contributed the following account of Fortune's Double Yellow Rose in the *Kew Bulletin*, No. 6, 1914. It is figured in the *Botanical Magazine*, tab. 4,679, but there is no specimen in the Kew Herbarium. The variety has been more or less confused with Rosa Fortuneana, Lindl. (*Paxt. Fl. Gard.* ii. p. 71, fig. 171), a hybrid between R. Banksiae and R. laevigata (for example R. Fortuneana, *Lem. Jard. Fleur.* iv. tab. 361, is simply a copy of the *Botanical Magazine* plate). Hemsley remarks (*Journ. Linn. Soc.* xxiii., p. 249) that R. Fortuneana, Lindl., is probably a hybrid between R. Banksiae and R. indica. Baker refers Fortune's Double Yellow to R. chinensis var. pseud-indica, which is regarded as identical with R. pseud-indica, Lindl. (*Monogr. Ros.*, p. 132), which was based on a painting of a double yellow Chinese Rose in Lambert's Herbarium, but this old drawing seems to have been completely lost sight of. Inquiry at the Natural History Museum, South Kensington, the Lindley Herbarium at Cambridge, and the Delessert Herbarium at Geneva (which acquired some of Lambert's specimens), has failed to trace it. Lambert's collections were sold by auction, and it would be interesting to trace the whereabouts of this original drawing. Fortune's Double Yellow also bears the name of Beauty of Glazenwood and Rosa amabilis Germaine de St. Pierre. Crepin (*Journ. Roy. Hort. Soc.* xi., p. 220) remarks that it seems very probable that it is only a garden variety of R. gigantea, but the idea is not borne out by comparison. It is most like a form of the variable R. indica, or a variety of it, but the natural limits of this species are so much obscured by hybridisation that it is difficult to form an opinion. At all events there are now dried materials at Kew which will be available for future comparison.

Cultivating Vacant Land.—The Vacant Land Cultivation Society has published the Sixth Annual Report of its activities at an opportune moment when the minds of many people are directed to developing means for bringing into cultivation a larger proportion of the available land. It will be remembered that the society was founded in London by Joseph Fels in 1908, its object being to bring into cultivation such land as is awaiting building operations. It obtains the loan of such land and lets it in plots, rent free, to needy working men and women. The total area at present controlled by the society is 60 acres, which affords plots for 600 men, and the families of these men collectively give a number of 2,000 persons who are deriving benefit from the scheme. There are also 600 applicants for plots who, at present, have to wait for more land, 75 acres being necessary to satisfy this number. It is said that in the metropolitan area there are 14,000 acres of unused land, and if this be true it ought to be possible for the society to obtain fresh areas, provided financial support is forthcoming to defray the expenses of management. We are informed that the gross retail value of the produce raised by the men since the foundation of the society exceeds £10,000, and that for every £1 spent by the society the plot-holders have reaped nearly £5 worth of vegetables. There is no doubt that the objects of the society are in every way praiseworthy. The sites themselves are greatly improved in appearance as compared with the neglected condition before the society takes them over. They afford means of recreation for able-bodied men, and the cultivation of such land increases to some extent the food supplies of the nation. We trust, therefore, that such a worthy institution will not have its objects hampered by lack of public support. The hon. organising director is Mr. HORACE J. WRIGHT, and the hon. secretary Mr. JOHN GORMAN, 180, Fleet Street, London, E.C.

CUT WORMS AND SURFACE CATERPILLARS.—Professor LEFROY, Entomologist to the Royal Horticultural Society, will be glad to receive live specimens of cut worms and surface caterpillars in quantity. Those who are able to assist by sending specimens should address them to Professor LEFROY at Wisley.

ARSENATE OF LEAD AS AN INSECTICIDE.—The use of arsenate of lead as a means of ridding Tobacco of Tobacco hornworms (Phlegethontius quinquemaculata) is advocated by Messrs. MORGAN AND PARMAN in *Farmers' Bulletin* 595, U.S. Department of Agriculture. Experiments of these investigators appear to show that lead arsenate is superior to Paris green. They recommend that it should be used with an equal bulk of wood ashes, and that the materials, thoroughly mixed, should be put on by means of a powerful "dust gun." The application should be made when dew is on the plants and when the air is still. The application must be thorough. Anyone wishing to test this insecticide should make sure of obtaining the diplumbic arsenate, and this may be done by asking for a guarantee that the arsenate of lead contains at least 30 per cent. of arsenic oxide ($As_2 O_5$), of which not more than 1 per cent. is free or water-soluble. It suffices to apply at the rate of 3½lb. of lead arsenate to the acre. If used in a water spray 3 to 4 lb. may be mixed with 100 gallons of water. A great advantage claimed for arsenate of lead is that, unlike Paris green, it is safe and effective during rainy weather.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

CHEIRANTHUS LINIFOLIUS.—I was glad to see Mr. Ball's appreciative note on Cheiranthus linifolius in your issue of September 12. The plant was not collected by myself, but seed was sent to me by Mr. Cedric Bucknall, who collected it in Spain. I showed the plant at the Chelsea Flower Show this year, under its synonym Erysimum linifolium, but the Floral Committee of the R.H.S. passed it over in giving their awards. The National Hardy Plant Society have, however, since given it their Award of Merit. Although in certain conditions it may prove a perennial, it is so easily raised from seed that it is perhaps best treated as an annual or a biennial, and for this reason I have hesitated to offer it among my hardy perennial and Alpine plants, and have only distributed seed with a suggestion that it is best grown as an annual or a biennial. It is a most beautiful plant, well worthy of a front place in the flower border, and charming on the rock garden. It is quite in keeping with Alpine and rock plants. As a wall plant it is also excellent, and starved in the rotten mortar of an old wall it is likely to prove more perennial than in ordinary garden loam. A very striking characteristic of Erysimum linifolium is its way of continuing to flower right through the winter. I have had the plant with a crop of its pretty lilac flowers in mid-winter, the petals quite unharmed by a thick coating of hoar frost. But, as Mr. Ball says, the main flush of flowers comes in summer. Perhaps by sowing seed in summer it could be induced to produce a main crop of flower in winter. I should be interested to know which is the more correct name, Cheiranthus linifolius or Erysimum linifolium. This summer I crossed it with Erysimum Perofskianum, and with the latter as seed parent fertile seed was produced. I cannot expect the hybrids to flower until next summer, but in the meantime, does the fact of the plant crossing readily with an Erysimum have any influence in deciding whether the plant is an Erysimum or a Cheiranthus? I suppose not, as bigeneric hybrids are not unknown. *Clarence Elliott, Stevenage.* [According to *Index Kewensis* the name is Erysimum linifolium.—EDS.]

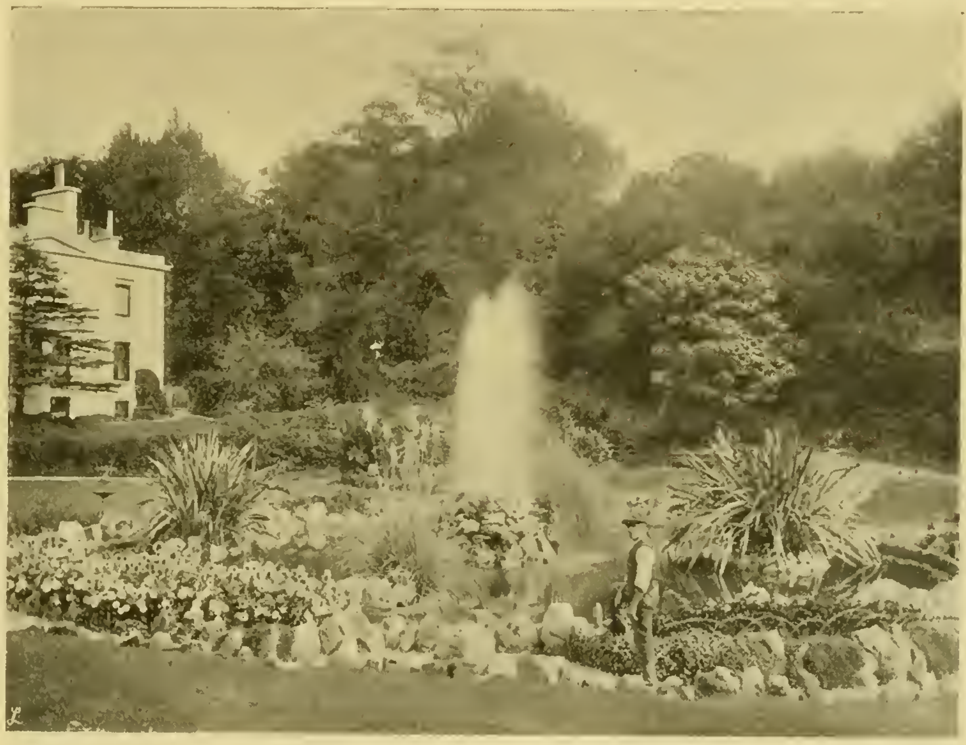


FIG. 82.—THE TORWOOD GARDENS, TORQUAY.
(See p. 199.)

LINUM MARITIMUM AND GLAUCIUM LEIOCARPUM.—From the Botanical Garden at Tours I received some seed labelled Linum maritimum. This name does not occur in Nicholson's *Dictionary of Gardening*, nor in any book which I possess, or to which I can refer. [Linum maritimum Linn. See *Index Kewensis.*—EDS.] The plant is worthy of more than a passing notice. It has the grace which seems inseparable from a Flax, and to this charm is added a stately habit, for the branches are quite 4ft. high; the foliage is glaucous; the lower leaves are almost spathulate, the upper lanceolate—they are alternate; the flowers, before they open, would be taken by anyone for those of Helianthemum alyssoides, but when open they are pure yellow. The plant was in full flower in June, and now (September 11) there are just as many flowers out. It sets seeds but sparingly. For a piece of colour, a little garish perhaps, but very arresting, one could not have a better thing than Glaucium leiocarpum; it is 1½ foot high, the leaves are glaucous, the flowers are 2½-3 inches in diameter, deep orange-scarlet, with large black blotches at the base. Its home is Asia Minor; it is only an annual. To my great disappointment it set no seed, though I carefully pollinated it. If anyone has seed to spare, I should be very glad to receive a pinch. *A. C. Bartholomew, Park House, Reading.*

WASPS ATTACKING DAHLIA STEMS.—Being interested in this subject, and not able to throw any light on it, I submitted the matter to Mr. E. M. Holmes, curator of the Pharmaceutical Society, who writes as follows after obtaining specimens of the culprits:—"The wasp is certainly the common wasp Vespa vulgaris, L., and the specimens sent consist of the workers. The tissue eaten away is the soft cellular substance, the vascular threads being untouched, just as when wasps attack a Plum or Pear. Thinking that possibly the stem of the Dahlia might contain sugar I tasted the continuation of the part attached, but it was not sensibly sweet, and it is therefore difficult to understand why the wasps eat it. The curious intoxicating effect of the juice on the insects is also remarkable. I have seen bees (drones) affected in a similar manner by the flowers of Asclepias syrica in Kew Gardens some years ago, but have never seen the Dahlia attacked by either wasps or bees. The juice of the Dahlia had a slightly acrid taste, but I believe it has not yet been subjected to a chemical examination, and its constituents are therefore practically unknown. Instead of starch, however, the Dahlia, like many plants of the Compositae, contains inulin, which is not, so far as I am aware, poisonous in the slightest degree.—E. M. H." The last sentence is particularly interesting in view of the fact that Bernard Smith, in his *Poisonous Plants of All Countries*, gives inulin as the toxic principle in Anacyclus Pyrethrum (a Levantine member of the Compositae) under the heading of "Simple Vegetable Irritants." Greer's *Manual of Botany* says that inulin, "a peculiar carbohydrate body," has the same percentage composition as starch, and, like it, is readily converted into a form of sugar. Is it possible that the wasps are able to convert Dahlia inulin into sugar? *C. Nicholson, Hale End, Chingford.*

PUBLICATION RECEIVED.—*The Standard Cyclopedia of Horticulture*, Vol. II. By L. H. Bailey. (Messrs. Macmillan and Co., Ltd., St. Martin's Street, London.) 25s. not.

TREES AND SHRUBS.

A POINT IN ACCLIMATISATION.

THE most interesting thing, perhaps, which the Arboretum has taught about Conifers is the fact that when a species is widely distributed over regions of different climates plants raised from the seeds of the trees growing in the coldest parts of the area of distribution of the species are the hardiest. For example, the Douglas Spruce (Pseudotsuga taxifolia) from the shores of Puget Sound, where this tree grows to its largest size, is not hardy here, but the same tree from the high mountains of Colorado is one of the hardiest and most promising of the exotic Conifers which have been planted in New England. Abies grandis from the cold Coeur d'Alêne Mountains of Idaho has been growing for years in the Arboretum, while the same tree from the north-west coast-region cannot be kept alive here. The same is true of the so-called Red Cedar or giant Arbor-vitae (Thuya plicata) of the north-west. Plants from Idaho are perfectly hardy in the Arboretum and now promise to grow to a good size, while those from the coast are tender here. The experience of the Arboretum with the Cedar of Lebanon is interesting, for this is a famous tree which it is desirable to establish wherever it can be induced to grow. The Cedar of Lebanon of European nurseries is raised from seeds produced in Europe by the descendants of the trees brought originally from the Lebanon in Syria. Occasionally one of these trees can be seen in the neighbourhood of New York and Philadelphia, but it is not hardy in New England. The Cedar of Lebanon also grows on the Anti-Taurus in Asia Minor, a much colder and more northern region than the Lebanon, and in 1901 the Arboretum had seeds collected from the trees in this northern station, and these were sown in the spring of 1902. None of the plants raised from this seed, although planted in exposed situations, have ever suffered and some of them are now from fifteen to eighteen feet high. This experiment may have important results, but a century at least will be needed to show its real success or failure.

The Colorado Blue Spruce, so-called (Picea pungens), promises to be a disappointment. This tree grows naturally near the banks of streams in Colorado, where it is not very common, and never forms forests or large groves; and at the end of a few years it becomes thin and scrawny, with a few short branches found only near the top of the tree. Plants up to twenty or thirty years of age in Colorado and in cultivation are symmetrical, compact and very handsome. No Conifer of recent introduction has been raised in such large quantities by nurserymen here and in Europe, and few ornamental trees have been more generally planted in the last twenty years. This must be considered a misfortune, for judging by old trees in Colorado and by the oldest trees in cultivation, this Spruce cannot be for any length of time a valuable addition to our plantations. It was discovered by Dr. Parry in 1862, and one of the trees raised from seeds which he sent at that time to Asa Gray is growing on the southern slope of Bussey Hill in the Arboretum. This specimen very well shows what this tree looks like at fifty years of age. The other Colorado Spruce, Picea Engelmannii, although it grows more slowly, promises to be a more permanently valuable ornamental tree than Picea pungens; certainly as it grows in Colorado, where it once formed great forests, at high altitudes, it is one of the most beautiful of all Spruces. The trees in the Arboretum were raised here from seeds collected in Colorado in 1879 and are believed to be the finest specimens in cultivation. They are narrow, compact, symmetrical pyramids and until a year or two ago were furnished with branches to the ground; now they are beginning to lose their lower branches and therefore are losing some of their beauty as specimen trees.

It is found here that the northern White Spruce (Picea canadensis) grows rapidly and is very handsome for about thirty years, and then begins to become thin and unsightly, probably because our climate is too warm for this cold country tree. It is found here, too, that the Red Spruce (Picea rubra), the great timber-producing Spruce tree of the north-eastern United States, is rather difficult to establish and grows more slowly than any other Conifer in the collection, and that the two Balsam Firs of the eastern states (Abies balsamea and A. Fraseri) are in cultivation short-lived and are of no value as ornamental trees; and that this is true, too, of one of the Rocky Mountain Firs, Abies lasiocarpa, and of the Siberian Abies sibirica. *Extract from Bulletin No. 60, issued by the Arnold Arboretum, U.S.A.*

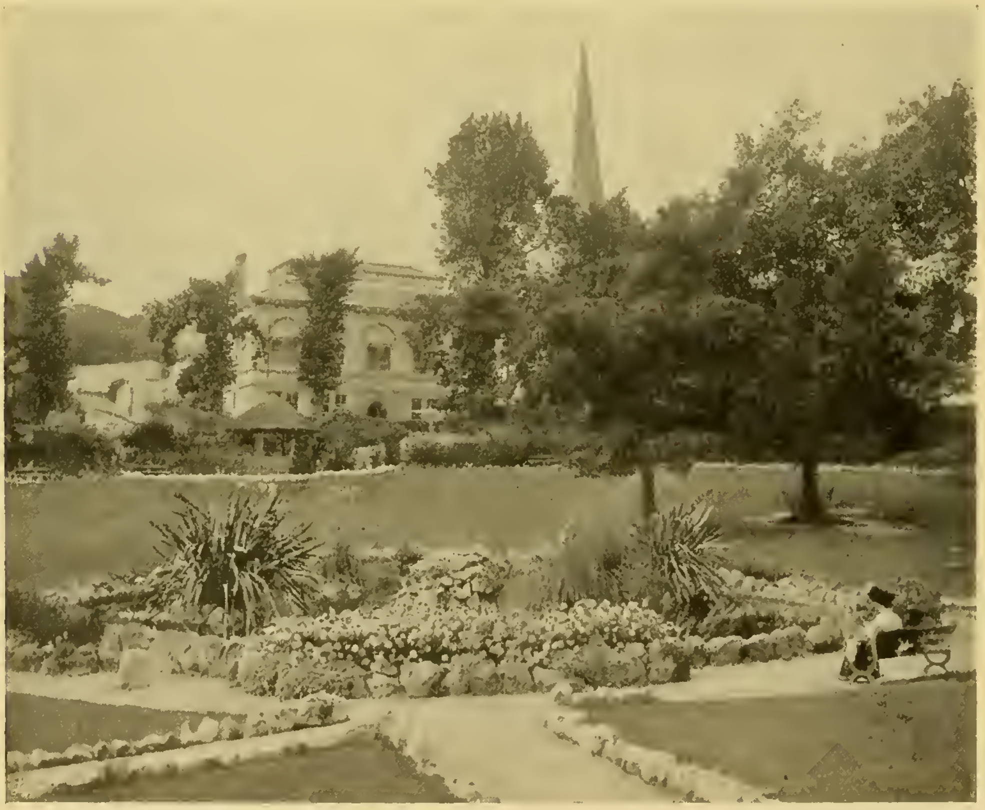


FIG. 83.—TORQUAY PUBLIC GARDENS. VIEW IN THE TORWOOD GARDENS.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

SEPTEMBER 8.—*Present:* Mr. E. A. Bowles (in the chair); and Messrs. J. Fraser, W. Hales, E. M. Holmes, G. Massee, J. T. Bennett-Poë, Hooper Pearson, W. C. Worsdell and A. Worsley.

Insect on Bay Leaves.—Mr. E. M. Holmes reported that the Lecanium on the leaves of Bay was L. hesperidium Linn. = L. Lauri Signoret. There seems no difference between the two, except that they occur on different plants.

Gall on Gerbera nov. spec.—Mr. Worsdell showed a leaf of a pink-flowered Gerbera from the Transvaal, with galls on the veins.

Pelargonium hybrid. — Mr. Fraser showed living specimens of a natural hybrid between P. denticulatum stella (male parent) and P. quercifolium minus (female parent). He exhibited dried specimens of the parent forms. The crossing had been effected by bees.

Pancratium canariense.—Mr. Worsley showed a "spike" from one of the seedlings of this plant raised by him. He has also succeeded in crossing the species with P. maritimum.

Dahlia Stem Eaten by Wasps.—Mr. Holmes exhibited a piece of stem, the fleshy cortical part of which, on one side, had been devoured by the common wasp (Vesta vulgaris), specimens of which were brought, showing them to be workers, not drones.

Papaver orientale × P. somniferum.—Mr. Bowles exhibited a supposed hybrid plant of this nature from Mr. Perry's garden. Mr. Perry had made a sowing of his white variety of P. orientale, amongst which a few plants of P. somniferum and a few of the hybrid had appeared, the majority coming true. The hybrid is infertile, and has so far proved to be hardy. It is a perpetual flowerer. Evidence of the presence of P. somniferum blood is found in the shiny, rather glaucous character of the leaves.

Rose Galls.—Mr. Bowles brought some small Rose galls from the Alpes-Maritimes.

HORTICULTURAL TRADES' ASSOCIATION.

ANNUAL MEETING.

SEPTEMBER 8.—The annual meeting of this Association was to have been held in Edinburgh this year, and arrangements had been completed by the Edinburgh nurserymen to give the members a good welcome. The war, however, led to the postponement of the Scotch visit, and, consequently, the annual meeting was held at the Hotel Windsor, London, on the 8th inst. Mr. W. Cuthbertson presided, and was supported by nearly 40 members.

On the proposition of Mr. R. W. Wallace, it was unanimously agreed that, in view of the exceptional circumstances, the President and members of the Council who would in normal circumstances retire at this time shall retain office for the ensuing twelve months.

The financial position of the Society was most satisfactory, many new members having come forward during the past twelve months.

The President proposed that the Association send officially their greetings and sympathy to their fellow-tradesmen in Belgium.

Mr. Stuart Low seconded this resolution, expressing his grateful recollections of many kindnesses received and friendships formed in that country. A suggestion in regard to financial help was considered premature, but the Council was empowered to take action later as circumstances should dictate.

The President said that in the brief manifesto which was sent to the Press, the Council of the Trades' Association said all that it was necessary to say in a general way. He was sorry to say that he had heard of a number of good orders being cancelled—orders for bulbs, and orders for new gardens and rockeries. On the other hand, he heard about one establishment where the gardener was explicitly told not to curtail his orders, rather to increase them. He thought he stated the case pretty accurately when he said that generally, since the declaration of war, the nursery and seed business had declined by 25 to 50 per cent. Some sections were coming back towards normal; for example, the flower trade in Covent Garden. The bulb trade, he feared, was going to be very seriously affected, and in this connection some of the Dutch firms were behaving very badly, so badly that serious notice must be taken of their conduct. After the bulb season was over, they would be into what should be the nurserymen's harvest. How the sales of Roses, fruit, and other trees would be affected was difficult to predict, adversely no doubt, but to what extent no one knew. It was certainly not in the best interests of the country that planting should be arrested. The position in front of the seed trade was a most difficult one. Many start this month preparing their spring catalogues. They do so with no prospect of obtaining their usual supplies from Germany, France, or Austria. What are they to do? Then, to many, the most pressing question is the immediate one of what is to be done with their employees. With many unless business resumes its normal course soon, it is a question of how long they can go on paying wages out of capital. Propagation will be finished in a week or two, the necessity for weeding and keeping nurseries trim and smart ceases for the winter. Are men to be turned off, some of whom may have served their employers well for many years?

It would be in the interests of all to reduce the staff to three-quarter or half time than to dispense entirely with a certain number. Then it would be cruel to reduce the 20s. a week men and allow the £3 or £4 a week men to remain at full pay. This was the time when sacrifice must be made all round. For the small employer, who is even now almost at the end of his tether, he felt very much. Perhaps he could see nothing but ruin staring him in the face, and he may have one or two faithful employees, the contemplation of whose case makes his own all the harder. He was sure the country could get along for a season without German seeds. They may have few or no Stocks and Asters and similar flowers, but that prospect should throw them on their own resources, and probably do them good. Let them get a boom on things they had. Propagate Pelargoniums, Calceolarias. Begonias, Marguerites, Pentstemons and Pansies more freely. Beds from seed of Snapdragons are as pretty as Ten Week Stocks any day, and even Nasturtiums, so popular in America, might fill many a gap. The only spirit in which they could go forward was one of dour determination to make the best of whatever circumstances arose.

The points raised by the President in his address, and others, including the advisability of coming to some understanding as to the date of publishing catalogues, were discussed. Amongst those taking part in the discussions were:—Messrs. Wallace, Jefferies, Neve, Cheal, Low, Baker, Veitch, Brown, Chaloraft. Pearson, Russell, Jackman, Slocock, Perkin, Barr, May, Wells and Clarke. It was urged that, both from a patriotic and business point of view, their best plan was to continue as nearly as possible on normal lines. This view was generally approved.

The company dined together in the evening.

VEGETABLE SHOW AT MANCHESTER.

September 10 and 11.—We are informed that the sixth annual vegetable show conducted by Messrs. Dickson and Robinson was held on Thursday and Friday of last week. Over four hundred exhibits were staged. The attendance at the show was in every way satisfactory.

In the open class for four bulbs of Premier Onion, Mr. J. Crossling was 1st with four fine specimens; 2nd, Misses Fitzpatrick (gr., Mr. Tysoe).

Mr. Thos. Jones was awarded the 1st prize in a similar class, open only to growers north of Birmingham; Mr. Chas. Parker being 2nd.

The prize offered for the most perfect bulb of Premier Onion was won by R. Cory, Esq. (gr. Mr. Cobb). with a very fine specimen.

In the class for the heaviest bulb, Mr. R. Bowering's specimen was placed 1st. His bulb weighed 3lb. 2½oz., which was a few ounces less than last year.

Capt. Lubbock (gr. Mr. Lowe) was 1st in the class for the best bunch of Moneymaker Tomatos and also in the class for Aviator Tomatos, Col. Gibbs (gr. Mr. Wilkinson) being 2nd in the former class, and Rev. McMurdie (gr. Mr. Basile) in the latter. In the class for Hercules Peas T. C. Horsfall, Esq. (gr. Mr. Leary) was 1st and C. L. Blundell, Esq. (gr. Mr. Guy) 2nd. For thirty pods of Lancastrian Peas Mr. W. Robinson was 1st and T. C. Horsfall, Esq., 2nd. In the Improved climbing French Bean class Mrs. Jenner (gr. Mr. Wheeler) was 1st, and Capt. G. Lubbock 2nd. Some excellent pods of Runner Beans were shown, and for the Exhibition variety the Misses Fitzpatrick were 1st (gr. Mr. Tysoe), and Mrs. Jenner (gr. Mr. Wheeler) was 2nd. The competition in the classes for Beetroot was particularly strong and good. The best Exhibition Beets were shown by Capt. G. Lubbock and J. B. Glegg, Esq. (gr. Mr. Fairbairn) was 2nd. The best Crimson Globe Beets by T. C. Horsfall, Esq., and 2nd C. E. Ellis, Esq. (gr. Mr. Young). The best two heads of Model Cabbage were shown by C. L. Kaye, Esq. (gr. Mr. Hope), and 2nd Capt. G. Lubbock. The best six roots of Perfection Carrot were shown by Mr. James White, and 2nd Misses Howell (gr. Mr. Jones). Mr. James White was also 1st in the class for six roots of Matchless Carrot, and Mr. Thos. White, jun., was 2nd. The best three heads of Standwell Cauliflower were shown by Mr. Thos. Jones; 2nd, Rt. Hon. Earl of Ellesmere (gr. Mr. Upjohn). The best three sticks of Prize Pink Celery were exhibited by Capt. H. Lonsdale (gr. Mr. Mills); 2nd, Rev. McMurdie (gr. Mr. Basile). The brace of Cropper Cucumber gaining 1st prize was shown by Mr. Thos. Jones; and 2nd, J. Heywood, Esq. (gr. Mr. Jenkins). The entry for Leeks was excellent, the best six plants of Exhibition Leeks being shown by Capt. Lonsdale; 2nd. Mr. Thos. Jones. The best six roots of Hollow-crown Parsnips were shown by Misses Fitzpatrick; 2nd, Capt. H. Lonsdale. The best coloured Potatos, 6 tubers each of two kinds, by Rev. McMurdie; 2nd. Mr. C. L. Blundell. The best white Potatos, 6 tubers each of two kinds, were exhibited by Misses Fitzpatrick; 2nd, Rev. McMurdie.

The best 40 roots of Scarlet Globe Radish were shown by Capt. Lubbock; 2nd, C. L. Blundell, Esq. The best two heads of Early Favourite Savoy, Capt. H. Lonsdale; 2nd, Capt. Lubbock. The best 6 roots of Manchester Market Turnip by Mr. Geo. Ashley; 2nd, Mr. Thos. Jones. The best brace of Vegetable Marrows was shown by Mr. Wm. Robinson; 2nd, Mr. Alf. Hall. The best 12 blooms of Cactus Dahlias (distinct), Mr. J. Heywood. A special prize was awarded to Mr. Lowe, gardener to Capt. G. Lubbock, who won 10 prizes, this being two more than the next highest.

ROYAL SCOTTISH ARBORICULTURAL.

ANNUAL EXCURSION.

(*Concluded from p* 154.)

An early start had to be made on Wednesday morning, for the journey from Tayside to Deeside, the next point of call, was a long one. The route was by Blairgowrie and the Devil's Elbow to Braemar, Aberdeenshire. Much of the country passed was treeless, but its possibilities for successful afforestation was admitted on all hands, the foreign visitors declaring that if they had so much good land so suitable it would not long remain unutilised. Dr. Müller, the Danish Government's representative, who is a great authority on soils, declared the land most suitable, as there was no "pan," and nothing of what the Germans call "Bleichstein"—a layer beneath the peat or heather—from which the iron and the basic materials, such as chalk, have been removed by the acids which penetrate the layer. There is an abundance of what is termed the "Roe" humus, above the roots of Heather, etc., and the land is, in Dr. Müller's opinion, perfect for the successful growing of Conifers. On arriving at Braemar, the party was met by Mr. William Mackintosh, factor to her Royal Highness the Princess Royal, and the visitors were guided by him through the great Mar Forest. The foreign representatives were particularly well pleased with the Scots Pines found here, and declared that they were the trees which could produce in this district as fine quality of timber—and at the most rapid rate of growth, comparatively speaking—as in any country in Europe. The company then proceeded to the Fife Arms Hotel, Braemar, for dinner, after which they went, under the guidance of Mr. John Michie, factor to the King on the Balmoral estate, and formerly head forester to his Majesty, over the ancient forest of Ballochbuie. This is one of the finest of the original Scottish woods, and contains a large number of trees which have weathered the storms of three hundred years. Here the Pines rise, with cylindrical boles free from branching, up to a height of more than 60 feet, and many of them over 100 feet. Some of these trees are over 250 years old, and their beauty greatly impressed the Continental visitors. In certain parts of Ballochbuie natural regeneration, assisted by planting and with protecting fences, has been the means of producing capital woods, and these proved of great interest.

By command of His Majesty, the visitors were entertained to tea at Balmoral Castle. Abergeldie and Birkhall were next inspected.

On Thursday morning the route lay down the Deeside valley, and it was with pleasurable anticipations that the party commenced this day's part of the programme, inspecting the estate of Ballogie, which has been favourably spoken of as one of the most suitable in Scotland for the establishment of a State forestry demonstration area. Ballogie was reached, and the visitors were welcomed by the proprietor, Mr. W. E. Nicol, and his forester, Mr. Wyllie. The importance of the woodland on Ballogie, from an educative point of view, is that it is admirably graded to show annual growth over a period of years. Mr. Nicol, with the aid of his forester, Mr. Wyllie, who has been at work on the estate forests for forty-two years, instituted a system of annual planting, which has placed the woods in an excellent condition for showing a rotation of the timber crop. It is important at the present stage in forestry education in this country that the medium ages of trees should be well represented in any demonstration area chosen, so that instruction may be given how those woods should be dealt with in respect of thinning, etc., and also that the various methods may be shown to all who should know them. The Ballogie woods are well balanced, and the age classes are so well distributed that practical forestry instruction could now be given from the earliest stages to the final cutting, without any waiting, and it was this fact, among other things, including suitability of soil and situation, which led the Advisory Committee of the Forestry Commission to recommend that Ballogie should be chosen as the demonstration area for a forest school in Scotland, suitable for foresters and students alike. The woods range from eight to ninety years of age, and all over look exceedingly healthy. As might be expected, the Scottish members of the party evinced a keen interest in the opinions the foreign and Colonial visitors had formed of Ballogie as a demonstration area. These were highly satisfactory, all the strangers declaring the area presented all that was best for the successful teaching of forestry, and was altogether an ideal one.

Finzean and Durris were next inspected, the former being owned by the Right Hon. Robert Farquharson, and the latter by Mr. Baird. Much that was of interest was found on these estates, and, after warm thanks to their hosts for their kind hospitality, the party proceeded to Aberdeen for the night.

On Friday morning a start was made for Speyside, but rain fell in torrents. At Orton Woods the rain ceased. Mr. J. W. Wharton Duff, the proprietor, and his head forester, Mr. James Clark, gave the visitors much interesting information. The Spey Valley—essentially the country of the Pine tree—was the next objective. Speyside is admirably adapted for Pine growing, the woods being situated at altitudes ranging from 600 to 1,600 feet above sea level. For the most part the soil is shallow and of a light nature overlying rock or "pan." Special interest was taken in the fine examples of self-seeding natural woods to be seen here. Mr. Gilbert Brown, woods manager on the Grantown portion of the Seafield estates, acted as guide, the valuable information he was able to impart being greatly appreciated. Among the forests explored were Tominourd, Upper Tomvaich, Lower Tomvaich, Drumduan, Milton, and Old Grantown.

Saturday was a beautifully fine day, and enabled the party to inspect with great comfort other woods in the Spey Valley, including the famous Abernethy Forest. This forest is noted for the height, girth, and substantial quality of its Pine trees. Novar, the finely-wooded estate of Sir R. C. Ferguson, a gentleman who has done admirable service to Scottish forestry, was the next place visited. Here the fine Pine woods created much interest, and worthily earned the admiration of all. After a few hours spent here, the party finally proceeded to Inverness, from whence they spread to various county mansions, where hospitality was extended them over the week-end.

SCOTTISH HORTICULTURAL.

SEPTEMBER 1.—The monthly meeting of this Association was held in the Goold Hall, 5, St. Andrew Square, Edinburgh, on the 1st inst. Mr. KING, the president, was in the chair, and there was an attendance of sixty-five members.

A paper was read by Mr. W. WILLIAMSON, Edinburgh, on the best method of cultivating land in small areas, with the object of settling the people on the land under circumstances which would be congenial and remunerative to the labourer. The establishment of holdings in groups was, he considered, essential in order to economise labour, and for the distribution of the produce, which should be on co-operative lines. Mr. WILLIAMSON mentioned that, a few days ago, the Board of Agriculture issued an appeal to the land owners and small holders, and all who had spare ground, to provide facilities for the cultivation of vegetables and small fruits as a means of employment in raising food for the people. This was, he said, the first official invitation to small holders during all those years of agitation to grow fruit and vegetables on part of their holdings; and, belated as the invitation was, it might be the prelude to some energetic action on the part of the authorities for carrying out a system such as the one that they had under discussion. The paper was criticised by the Chairman, Messrs. Cairns, J. W. Scarlett, Livingstone, Comfort, and the secretary, and, on the motion of Mr. M'Hattie, Mr. WILLIAMSON received a very cordial vote of thanks. The Chairman said he wished to see a great many small holdings in the country, but the great difficulty was to get the right men to take them up. They wanted men with energy and resource, and capacity for hard work. The secretary, Mr. Richardson, said that the only way to make small holdings succeed in outlying districts was to work them in conjunction with State forests, and that the small holding *per se* would only succeed in the outskirts of towns and in favourable localities where there was a good market for the produce.

The exhibits were:—Double Begonias, from Mr. JOHN DOWNIE, Edinburgh (awarded a Cultural Certificate for the group, and a Certificate of Merit to the variety "Snowflake"); new winter-flowering Carnation, "Mrs. A. Arthur," and Pentstemon, "Mrs. F. Fulford," from Mr. F. FULFORD, Montgomerie Gardens, Tarbolton; Onopordon bracteatum, from Messrs. TODD AND Co., Edinburgh; Colutea arborescens, in fruit, from Messrs. JAMES GRIEVE AND SONS, Edinburgh; and Apples from Mrs. HEYWOOD, Trinity, Edinburgh (awarded a Cultural Certificate).

PRICES OF FRUIT AND VEGETABLES.*

(COMPARATIVE TABLES.)

The first column under each market shows the local quotation, the second column gives the quotation at the common weight or measure, converted, in some cases, from the local quotation.

DESCRIPTION.	Quality.	Birmingham.		Bristol.		Evesham.		Hull.		Leeds.		Liverpool.		London.		Manchester.	
		Per	Per cwt.	Per	Per cwt.	Per	Per cwt.	Per	Per cwt.	Per	Per cwt	Per	Per cwt.	Per	Per cwt.	Per	Per cwt.
FRUIT.		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s.
APPLES—*British.*																	
Blenheim Pippin	1st	...	...	...	...	½ cwt 4 6	9 0	...	..	..	...	...	...	...	...	...	...
	2nd	...	...	...	...	3 0	6 0	...	...	...	...	...	...	...	..	...	...
Quarrenden	1st	...	...	...	...	5 6	11 0	...	...	...	...	pot. 7 0	12 6	½ bshl. 2 0	10 6	...	10 0
	2nd	..	...	...	...	5 0	10 0	...	...	...	...	5 0	9 0	1 9	9 6	...	8 0
Worcester Pearmain	1st	pot. 7 0	12 0	...	14 0	6 0	12 0	½ bshl 3 0	16 0	stone. 2 0	16 0	6 6	11 6	1 9	9 6	...	10 0
	2nd	5 0	8 6	...	10 0	4 6	9 0	2 6	13 6	1 9	14 0	4 0	7 0	1 6	8 0	...	8 0
Other Dessert Varieties ...	1st	5 0	8 6	...	10 0	5 0	10 0	...	16 0	...	...	7 0	12 6	1 9	9 6	.	9 0
	2nd	4 6	7 0	...	8 0	3 0	6 0	...	10 0	...	...	4 0	7 0	1 6	8 0	...	5 0
Keswick Codling	1st	2 6	4 6	...	6 0	2 6	5 0	...	8 0	1 6	12 0	3 6	6 0	busbl. 1 9	4 6	...	5 0
	2nd	2 0	3 6	...	4 0	1 9	3 6	...	6 0	1 3	10 0	2 6	4 6	1 6	4 0	...	...
Lord Derby	1st	...	...	...	9 0	3 9	7 6	...	10 0	...	...	...	...	...	...	...	8 0
	2nd	...	..	...	7 6	2 9	5 6	...	8 0	...	...	...	...	...	...	...	7 0
Lord Grosvenor	1st	4 0	7 0	...	8 0	3 6	7 0	...	10 0	1 3	10 0	4 6	8 0	1 9	4 6	...	7 0
	2nd	3 0	5 0	...	7 0	2 6	5 0	...	7 0	1 0	8 0	3 0	5 6	1 6	4 0	...	5 0
Lord Suffield	1st	4 0	7 0	...	8 0	3 6	7 0	...	...	1 6	12 0	5 0	9 0	2 0	5 6	...	8 0
	2nd	3 0	5 0	...	6 0	2 6	5 0	.	...	1 3	10 0	3 6	6 0	1 9	4 6	...	...
Warner's King	1st	4 6	8 0	...	9 0	3 6	7 0	...	...	1 3	10 0	5 0	9 0	2 6	6 6	...	8 0
	2nd	3 6	6 0	...	7 0	2 9	5 6	...	...	1 0	8 0	3 0	5 6	2 3	6 0	...	7 0
Other Cooking Varieties ...	1st	3 6	6 0	...	9 0	4 0	8 0	...	8 6	1 3	10 0	3 6	6 0	2 3	6 0	...	9 0
	2nd	2 6	4 6	...	5 0	2 0	4 0	...	5 0	1 0	8 0	2 0	3 6	2 0	5 6	...	6 0
PEARS—*British.*																	
Hessle	1st	3 0	4 6	...	7 6	...	...	...	8 0	1 3	10 0	bushl. 5 0	11 6	3 0	8 0	...	7 0
	2nd	2 6	4 0	...	5 6	...	...	..	6 0	1 0	8 0	4 0	9 6	2 6	6 6	...	6 0
Jargonelle	1st	...	...	...	...	...	...	...	...	...	..	..	...	3 6	9 6	...	14 0
	2nd	...	...	...	...	...	...	...	...	...	...	...	...	3 0	8 0	...	12 0
Pitmaston Duchess	1st	7 0	11 0	..	12 0	6 0	9 6	...	...	2 3	18 0	..	...	4 0	10 6	...	12 0
	2nd	5 0	8 0	...	8 0	4 6	7 0	...	...	1 9	14 0		...	3 6	9 6	...	...
Williams' Bon Chrêtien ...	1st	5 0	8 0	...	12 0	4 6	7 0	2 6	13 6	1 9	14 0	pot. 7 6	12 6	4 6	12 0	...	12 0
	2nd	4 0	6 0	...	7 0	3 6	5 6	2 0	10 6	1 6	12 0	5 0	8 6	3 0	8 0	...	...
Windsor	1st	...	...	...	...	...	...	...	...	...	...	7 0	12 0	...	...	...	10 0
	2nd	...	...	...	...	...	..	...	...	...	...	5 0	8 6	...	..	...	...
Common Varieties	1st	3 0	4 6	...	6 0	3 6	5 6	...	8 0	1 3	10 0	4 0	7 0	3 6	9 6	...	6 0
	2nd	2 0	3 0	...	4 0	2 0	3 0	...	6 0	1 0	8 0	3 0	5 0	3 0	8 0	...	5 0
BLACKBERRIES	1st	...	lb. 0 1½	...	lb. 0 2	...	lb. 0 1¾	...	lb. 0 4	...	lb 0 3½	..	lb. 0 3	peck 2 0	lb 0 2	...	lb. 0 2
	2nd	...	0 1	...	...	...	0 1¼	...	0 3	...	0 3		0 2½	1 9	0 1¾	...	0 1
GREENGAGES, British ...	1st	6 0	cwt. 9 6	½ bshl 3 0	cwt. 14 0	...	cwt. ...	...	cwt ...	2 0	cwt. 16 0	½ bshl. 4 6	cwt. 21 0	bshl 3 0	cwt. 14 0	...	cwt. ...
	2nd	4 0	6 0	2 0	9 6	...	...	...	...	1 6	12 0	3 0	14 0	2 6	11 6	...	...
PLUMS—*British.*																	
Belle de Louvaine	1st	7 6	11 6	3 0	14 0	...	...	...	...	...	...	3 6	16 6	...	...	...	...
	2nd	6 0	9 6	2 6	11 6	...	...	...	...	...	...	2 6	11 6	...	...	...	...
Black Diamond	1st	7 6	11 6	2 6	11 6	7 6	11 6	3 6	16 6	...	...	3 0	14 0	...	...	½ bshl. 3 0	14 0
	2nd	6 0	9 6	2 0	9 6	4 6	7 0	3 0	14 0	...	..	2 6	11 6	...	.	2 6	11 6
Monarch	1st	8 0	12 6	2 6	11 6	9 6	15 0	3 6	16 6	...	...	3 0	14 0	3 0	14 0	3 6	16 6
	2nd	6 0	9 6	2 0	9 6	7 0	11 0	2 6	11 6	...	...	2 6	11 6	2 6	11 6	3 0	14 0
Pond's Seedling	1st	8 0	12 6	3 9	17 6	9 6	15 0	...	...	2 3	18 0	3 6	16 6	4 0	18 6	3 6	16 6
	2nd	6 0	9 6	2 3	10 6	7 6	11 6	...	...	2 0	16 0	2 6	11 6	3 6	16 6	3 0	14 0
Victoria	1st	8 0	12 6	2 0	9 6	4 8	7 6	3 0	14 0	1 9	14 0	3 6	16 6	3 6	16 6	2 6	11 6
	2nd	6 0	9 6	1 6	7 0	3 0	4 6	2 6	11 6	1 3	10 0	1 9	8 0	2 6	11 6	2 0	9 6
DAMSONS	1st	6 0	9 6	2 3	10 6	6 0	9 6	2 6	11 6	1 6	12 0	2 6	11 6	1 6	7 0	2 0	9 6
	2nd	5 0	8 0	1 6	7 0	4 6	7 0	2 0	9 6	1 3	10 0	2 0	9 6	1 3	6 0	...	...
GRAPES—*British.*																	
Black Alicante	1st	...	lb. 0 10	...	lb. ..	...	lb. ...	...	lb. 1 2	...	lb. 1 0	...	lb. 0 10	...	lb. 1 3	...	lb. 0 9
	2nd	...	0 8	..	...	...	...	...	1 0	...	0 8	..	0 8	...	0 8	...	0 8
Black Hamburgh	1st	..	0 8	...	...	...	...	...	1 0	...	0 8	-	0 9	..	1 6	...	0 10
	2nd	...	0 6	...	..	...	...	...	0 10	...	0 6	...	0 7	...	0 9	...	0 9
Gros Colmar	1st		1 3		...	...	.	...	...	...	1 4	.	1 0	...	1 3	...	1 0
	2nd	...	0 10	...	...	...	...	...	...	...	1 0	...	0 9	...	0 10	...	0 10
Muscat	1s		1 6	...	2 0	...	...	...	...	...	1 9	...	1 6	...	2 0	...	1 3
	2nd	...	1 0	..	1 6	...	...	...	...	...	1 3	...	1 0	...	1 0	...	1 0
VEGETABLES.																	
Beans, Dwarf, British ...	1st		cwt. ..	...	cwt. ...	...	cwt. ...	...	cwt. 8 0	pot. 2 6	cwt. 7 0	pot. 1 9	cwt 4 11	bshl. 1 6	cwt 11 3	pot. 1 0	cwt. 2 10
	2nd	...	...	...	...	...	...	...	5 0	2 3	6 4	1 3	3 6	1 3	9 3	...	...
" Scarlet Runners, British	1st	pot. 1 0	2 10	...	4 0	0 9	2 1	...	6 0	2 0	5 7	1 9	4 11	busbl 2 3	8 6	1 3	3 6
	2nd	0 6	1 5	..	2 6	0 5	1 2	...	4 0	1 9	4 11	1 3	3 6	2 0	7 6	1 0	2 10
Beet	1st	...	3 0	doz. 0 9	6 0	1 6	3 0	...	5 0	...	4 0	doz. 0 7	...	dz. bn 2 6	...	doz. 0 10	...
	2nd	...	2 6	0 6	...	0 9	1 6	...	..	...	3 6	0 5	...	2 0	...	0 8	...
Brussels Sprouts	1st	..	...	...	..	2 6	7 0	...	...	...	...	...	...	...	...	...	...
	2nd	...		...	...	1 6	4 0	...	...	...	...	...	...	...	.	...	...
Cabbage	1st	d z. 1 3	...	1 0	...	...	...	doz. 1 3	...	doz. 0 9	..	1 4	...	doz. 1 2	...	1 0	...
	2nd	1 0	...	0 6	...	...	...	0 9	...	0 8	...	1 2	..	1 0	...	0 10	...
Carrots, British	1st	...	4 0	dz. bn. 0 8	4 0	...	3 6	...	4 6	...	4 0	dz. bn. 0 8	4 0	...	3 0	...	5 0
	2nd	...	3 6	0 7	3 0	..	3 0	...	...	...	3 6	0 7	3 6	...	2 6	...	4 6
Cauliflowers, British	1st	1 6	...	doz. 1 6	..	doz 1 3	...	2 6	...	1 3	...	doz. 1 0	...	2 0	...	1 6	...
	2nd	1 0	...	1 0	...	0 6	...	1 6	...	0 9	...	0 10	...	1 9	...	1 3	...

NOTE.—The following approximate weights have been taken for purposes of conversion:—*Apples*:—Pot=63-64 lbs.; ½ bushel=2 lbs *Pears*:—Pot=66-72 lbs.; ½ bushel=2 -24 lbs *Blackberries*:—Peck=12 lbs. *Plums, Greengages, and Damsons*:—Pot=72 lbs.; ½ bushel= 4 lbs. *Beans*:—Pot=40 lbs.; bushel=30 lbs *Beet*:—Pot=56 lbs. *Brussels Sprouts*:—Pot=40 lbs.

* Extracted from Board of Agriculture "Return of Market Prices," September 9, 1914.

Prices of Fruit and Vegetables.—*Continued.*

DESCRIPTION.	Quality.	Birmingham.		Bristol.		Evesham		Hull.		Leeds.		Liverpool.		London.		Manchester.		Wolverhampton.	
		Per	Per cwt.	Per	Per cwt.	Per	Per cwt	Per	Per cwt	Per	Per cwt	Per	Per cwt.	Per	Per cwt.	Per	Per cwt	Per	Per cwt.
Vegetables (*cont.*)		*s. d.*	*s. d*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Celery	1st	bun. 1 0	...	doz 1 3	...	...	...	bun. 1 6	...	bun. 1 2	...	doz. 1 8	...	bun. 1 3	...	doz. 1 6	...	doz. 1 6	...
	2nd	0 9	...	1 0	.	...	...	1 0	...	0 10	...	1 3	..	0 10	..	1 0	...	1 0	...
Cucumbers, Home-grown, Forced	1st	doz. 2 0	...	2 6	...	doz. 1 0	...	doz. 3 0	...	doz. 2 6	...	3 0	...	doz. 2 3	...	2 6	...	...	...
	2nd	1 6	...	2 0	...	0 6	...	2 0	...	2 0	...	2 0	...	2 0	..	2 0	...	...	...
,, ,, Outdoor	1st	...	...	1 0	...	0 7	...	...	...	...	...	...	...	1 9	...	...	...	2 0	...
	2nd	...	...	0 9	...	0 4	...	...	...	...	...	...	...	1 0	...	...	...	1 0	...
,, Imported	1st	crate 2 0	...	...	...	...	...	box. 3 0	...	...	...	...	...	box. 3 0	...	...	...	box. 2 0	..
	2nd	1 6	...	...	...	...	...	2 0	...	...	...	...	...	2 9	..	...	...	1 6	...
Lettuce, Cos, Homegrown	1st	doz. 1 3	...	0 6	...	...	...	doz. 1 0	...	1 0	...	0 7	...	doz. 0 10	...	1 0	...	doz. 1 0	...
	2nd	1 0	...	0 4	...	...	...	0 8	...	0 9	...	0 6	...	0 8	...	0 10	...	...	...
,, Cabbage, Homegrown	1st	...	...	0 4	...	...	...	...	...	1 0	...	...	...	1 0	...	...	...	...	...
	2nd	...	...	0 3	...	...	...	...	...	0 9	...	...	...	0 10	...	...	...	...	...
Mint, Outdoor ...	1st	dz.bn. 0 3	...	...	...	...	...	...	...	dz.bn. 0 6	...	dz.bn. 0 5	...	dz.bn. 2 3	...	40 bun 1 0	..	...	...
	2nd	0 2	...	...	...	...	...	...	...	0 4	...	0 4	...	2 0	...	...	...	...	...
Onions, British ...	1st	...	6 6	...	6 6	...	6 6	...	..	...	...	...	...	...	6 0	...	4 0	...	...
	2nd	...	5 6	...	5 0	...	4 0	...	...	...	...	...	...	...	5 6	...	...	...	...
,, Dutch ...	1st	...	5 0	...	5 0	...	...	...	4 0	...	5 0	...	...	...	5 3	...	4 0	...	5 0
	2nd	...	...	...	4 6	...	...	...	3 0	..	4 6	...	...	...	5 0	...	...	...	4 6
,, Valencia	1st	case. 7 6	7 0	case. 7 0	6 6	...	...	case. 6 6	6 0	case. 7 6	7 0	case. 6 6	6 0	case. 6 6	6 0	case. 7 0	6 6	case 7 0	6 6
	2nd	6 0	5 6	5 0	4 6	...	...	4 9	4 6	6 0	5 6	5 0	4 6	5 9	5 6	5 6	5 0	5 0	4 6
,, Spring ...	1st	dz.bn 2 6	...	dz.bn. 0 3	...	...	...	...	...	36 bn 1 0	...	dz.bn. 0 5	...	dz bn. 3 0	...	12 bn. 1 0	...	dz bn. ...	...
	2nd	2 0	...	...	...	...	...	...	...	0 10	...	0 4	...	2 6	...	...	...	...	...
Parsnips	1st	...	4 6	...	4 0	...	3 9	...	5 0	...	...	...	...	...	3 0	...	4 6	0 8	...
	2nd	...	3 6	...	3 6	...	3 0	...	...	...	..	...	...	...	2 9	...	4 0	..	...
Peas, Homegrown	1st	pot. 3 0	8 0	pot. 3 6	10 0	pot 4 0	11 0	bag. 8 0	11 0	pot 3 6	10 0	hmpr. 5 6	13 6	bushl. 6 0	20 0	bag. 7 0	10 0	pot. 2 0	5 6
	2nd	2 0	5 6	2 6	7 0	2 6	7 0	6 0	8 6	3 0	8 6	4 6	11 0	5 0	16 0	3 0	4 0	1 6	4 0
Radishes, Homegrown	1st	dz.bn. 0 2½	...	...	...	...	...	...	...	40 bun 1 0	...	...	...	dz bn 1 0	...	12 bun 1 0	...	...	...
	2nd	...	...	...	...	...	...	...	...	0 10	..	...	...	0 10	...	...	...	...	...
Spinach, Homegrown	1st	...	...	...	10 0	...	...	...	...	...	...	lb. 0 1½	14 0	½ bush 1 3	14 0	...	...	...	...
	2nd	...	...	...	9 0	...	...	...	...	...	...	...	...	1 0	11 0	...	...	..	...
Turnips, White ...	1st	0 9	...	dz.bn 0 9	2 6	1 6	2 10	...	...	dz. bn. 0 6	...	doz. 0 6	...	dz. bn 3 0	...	...	2 6	dz bn 0 8	...
	2nd	0 7	...	0 6	2 0	0 9	1 5	...	...	0 4	...	0 5	..	2 6	...	...	2 0	...	...
Vegetable Marrow	1st	pot. 1 6		doz. 1 0	...	doz. 1 0	...	doz. 1 4	...	doz. 1 0	...	1 3	...	doz. 1 0	...	pot. 1 6	...	doz. 2 0	...
	2nd	1 0	...	0 9	...	0 4	...	0 10	...	0 8	...	1 0	...	0 10	...	...	...	1 0	...
Watercress ...	1st	12 lbs. 1 6	14 0	12 lbs 1 6	14 0	...	...	...	24 0	stone. 2 6	20 0	...	...	dz. bn 0 6		...	...	12 lbs. 1 6	14 0
	2nd	...	...	...	...	...	...	...	20 0	2 0	16 0	...	...	0 4		...	...	..	...
Mushrooms, Forced	1st	...	12 lbs ...	...	12 lbs ...	...	12 lbs. ...	...	12 lbs ...	...	12 lbs. ...	...	2 lbs ...	...	12 lbs. 14 0	...	12 lbs ...	...	12 lbs. ...
	2nd	...	...	...	...	...	...	...	...	...	...	...	...	...	12 0	..	...	...	...
,, Outdoor	1st	...	...	..	6 0	...	...	...	8 0	...	8 0	...	8 0	...	6 0	...	8 0	...	8 0
	2nd	...	...	...	4 0	...	...	...	6 0	...	6 0	...	6 0	...	5 0	...	4 0	...	...
Tomatos, British	1st	...	2 0	...	2 6	...	2 6	...	2 6	...	2 6	...	2 6	...	2 0	...	2 3	...	...
	2nd	...	1 0	...	2 0	...	1 3	...	2 0	...	2 0	...	2 0	...	1 9	...	1 0	...	...
,, Channel Islands	1st	...	1 9	..	1 9	...	...	...	2 0	...	2 0	...	2 0	...	1 0	...	1 9	...	2 0
	2nd	...	1 0	...	1 0	...	...	...	1 6	...	1 6	...	1 6	...	1		1 3	...	1 6
,, Dutch...	1st	...	1 0	...	1 6	...	...	...	1 6	...	...	...	...	...	1 0	...	1 3	...	1 3
	2nd	...	0 9	...	1 0	...	...	...	1 0	...	...	...	...	...	0 9	...	1 0	...	1 0
POTATOS—*British.*						Wisbech													
First Earlies ...	1st	..	ton. ...	...	ton. 80 0	...	ton. ...	...	ton. 70 0	...	ton. ...	...	ton. ...	..	ton. 75 0	cwt 2 6	ton. 50 0	...	ton. ...
	2nd	...	...	...	70 0	...	...	...	50 0	...	...	...	...	...	70 0	2 0	40 0	...	...
Second Earlies.																			
British Queen ...	1st	...	60 0	...	75 0	...	45 0	...	...	bag. 3 9	67 6	cwt 2 9	55 0	..	75 0	2 6	50 0	...	...
	2nd	..	50 0	...	70 0	...	...	...	...	3 3	58 6	2 6	50 0	...	70 0	2 0	40 0	...	...
Others	1st	...	...	...	70 0	...	45 0	...	70 0	3 9	67 6	...	...	...	70 0	2 6	50 0	...	...
	2nd	...	...	...	60 0	...	...	...	50 0	3 3	58 6	...	...	...	65 0	2 0	40 0	...	...
Late Varieties.																			
Blackland ...	1st	...	...	...	...	...	40 0	...	...	...	...		...	...	65 0	2 6	50 0	...	...
	2nd	...	...	...	...	...	...	...	...	...	...	.	...	..	60 0	2 0	40 0	...	...
Edward VII. ...	1st	...	70 0	...	80 0	...	55 0	...	...	4 0	72 0	2 9	55 0	...	75 0	3 0	60 0*	...	60 0
	2nd	...	60 0	...	70 0	...	50 0	...	...	3 9	67 0	...	...	...	65 0	2 6	50 0*	...	...
Up-to-date, Lincolnshire	1st	...	60 0	...	...	...	47 6	..	...	...	..	...	...	...	75 0	...	...	...	...
	2nd	...	50 0	...	...	...	40 0	...	...	...	...		...	...	65 0	...	...	...	...
,, Other Districts	1st	...	60 0	...	70 0	...	...	...	.	3 9	67 6	2 8	53 6	...	...	2 6	50 0	...	55 0
	2nd	...	50 0	...	65 0	...	...	...	...	3 6	63 0	2 4	46 6	...	..	2 3	45 0		...
Other Late Varieties	1st	...	60 0	...	...	...	...	...	...	...	...	2 8	53 6	...	75 0	...	...	...	...
	2nd	...	50 0	...	...	...	...	.	...	...		2 4	46 0	...	65 0	...	...	...	...

Valencia Onions :—Case = 120 lbs. *Peas* :—Pot = 40 lbs. ; bushel = 34 lbs ; bag = 80 lbs. ; hamper = 45 lbs. *Spinach* :—½ bushel = 10 lbs. *Turnips* :—Pot = 60 lbs. *Potatos* :—Bag = 126 lbs.

* Cheshire.

NOTICE OF BOOK.

"Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy."*

This book has already established so good a name for itself that it is superfluous to say much in the way of praise, or even to describe its general plan. There are probably few students at the present moment who do not possess a copy, and perhaps fewer still who would care to part with such a valuable guide until they had quite finished with it. While the purpose of this book remains unaltered, there has been careful revision, and several sections have been rearranged. Some of the older formulæ have been replaced by more modern prescriptions, and the vocabularies have been elaborated and extended to embrace the most recent medical and pharmaceutical nomenclature. Though the book in its first edition was almost beyond criticism, it is now more than ever one upon which the utmost reliance may be placed. As a manual on Latin for medical and pharmaceutical students, it is probably without an equal.

---

* *Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy.* By Reginald R. Bennett, B.Sc. With an introduction by Henry O. Greenish. Second edition. Pp. xiv. + 443. Price 6s. 6d. net. London: J. and A. Churchill. 1914.

MARKETS.

COVENT GARDEN, September 16.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— single, per doz. bunches ..	1 0- 1 6
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	0 9- 1 0
— smaller, per doz. bunches ..	2 0- 4 0
— Carola (crimson), extra large	1 6- 2 0
— Malmaison, per doz. blooms	
— — pink ..	8 0-10 0
Chrysanthemum, Almirante, bronze, per doz. blooms .	0 9- 1 0
— Ashley, pink, per doz. bun...	3 0- 4 0
— Betty Spark, Pink, per doz. bunches ..	4 0- 6 0
— Countess, white, per doz. blooms	1 3- 2 0
Hollycott, Bronze, per doz.	0 9- 1 3
— Martin, yellow, per doz. bun....	3 0- 4 0
— Mercedes, yellow, per doz. blooms ..	1 0- 2 0
— Mrs. Beech, bronze, per doz. blooms ..	0 8-0 10
— Princess, pink, per doz. ..	2 0- 2 6
— sprays, white, per doz. bun...	4 0- 6 0
Eucharis, per doz.	1 6- 2 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 1 6
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus, America, pale pink, per doz. spikes ..	0 6- 1 0
— brenchleyensis, scarlet, per doz. spikes	0 9- 1 0
Gypsophila, white	2 0- 4 0
— — double, per doz. bunches ..	6 0- 8 0
Lapageria alba, per doz. blooms ..	1 0- 1 6
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long..	0 9- 1 0
— — short ..	0 9- 1 0

	s. d. s. d.
Lilium auratum—*continued.*	
— lancifolium album, long ..	1 0- 1 6
— — — short ..	1 0- 1 6
— — rubrum, per doz., long ..	0 8 0 10
— — short ..	0 6 —
Lily of-the-Valley, per dozen bunches:	
— extra special ..	12 0-15 0
— special	9 0-10 0
– ordinary ..	7 0- 8 0
Marguerites, per doz. bunches ..	0 9- 1 0
Michaelmas Daisies, per doz. bunches ..	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Harrisonii, per doz. blooms ..	4 0- 5 0
— Odontoglossum crispum ..	2 0- 3 0
Pancratium, per dozen blooms..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Physalis, per doz. bun.	4 0- 6 0
Roses: per dozen blooms, Bride	0 6- 1 0
— Bulgaria ..	0 9- 1 0
— Frau Karl Druschki ..	1 0- —
— Kaiserin Augusta Victoria	0 6- 0 9
— Lady Hillingdon	0 6- 0 9
— Liberty ..	0 9- 1 0
— Madame A. Chatenay ..	0 9- 1 6
— Melody ..	0 9- 1 0
— My Maryland..	0 6- 0 9
— Niphetos ..	0 9- 1 0
— Richmond ..	—
— Sunburst ..	0 9- 1 0
— Sunrise ..	—
— White Crawford	0 9- 1 0
Scabiosa, mauve, per doz. bnchs.	2 6- 3 0
Statice, mauve, per doz. bunches..	1 6- 2 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	1 6- 2 0
Sweet Sultan, mauve per doz. bnchs.	1 6- 2 0
— yellow	1 0- 1 6
– white	1 6- 2 0
Violets, English, per doz. bunches ..	1 6- 2 0
White Heather, per doz. bunches..	4 0- 6 0

Remarks.—There does not appear to be any further increase in the supplies since last week except in the case of Chrysanthemums, the supply of which exceeds the demand, and the quality is exceptionally good. There is a decrease in the supply of Stephanotis, Lily-of-the-Valley and Roses. Physalis can now be obtained in its best condition. Michaelmas Daisies are more plentiful, and there is a better demand for small-flowered varieties. There are a few English Violets on the market. Prices for most subjects remain as for last week, but there is an improvement in business, and produce has been going out more freely this week. It is expected that better prices will be realised shortly.

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Carnation foliage, doz. bunches ..	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Lichen Moss, per dozen boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved .	6 0 —
Smilax, per bunch of 6 trails ..	1 0- 1 3

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated ..	30 0-60 0
Asters, Coloured, 48's, per dozen	3 0- 4 0

	s. d. s. d,
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Croton, per dozen	18 0-30 0
Dracaena, green, per dozen	10 0-12 0
Erica nivalis, 48's, per dozen ..	12 0-15 0
– — thumbs, per doz ..	4 0- 5 0
— gracilis, thumbs, per doz. ..	4 0- 5 0
— — 48's, per doz.	10 0-12 0

Plants in Pots, &c : Average Wholesale Prices, *contd.*

	s. d. s. d.		s. d. s. d.
Ferns, in thumbs, per 100.. ..	8 0-12 0	Lilium lancifolium album, pr. doz.	18 0-24 0
— in small and large 60's ..	12 0-20 0	— — rubrum, per doz. ..	15 0-21 0
— in 48's, per dozen	5 0- 6 0	— longiflorum, per dozen	12 0-15 0
— choicer sorts, per dozen ..	8 0-12 0	Lily-of-the-Valley	—
— in 32's, per doz.	10 0-18 0	— 48's, per dozen	21 0-30 0
Ficus repens, 48's, per doz. ..	4 6- 5 0	Marguerites, in 48's, per doz., white	4 0- 6 0
— — 60's, per doz.	3 0- 3 6	Palms, Cocos Weddeliana, 48's, per doz.	18 0-30 0
Geonoma gracilis 60's per dozen..	6 0- 8 0	— — — 60's, per doz.	8 0-12 0
— larger, each ..	2 6- 7 6	Pandanus Veitchii, per dozen ..	36 0-48 0
Hydrangeas, pink, per doz. 48's ..	10 0-18 0	Phoenix rupicola, each	2 6-21 0
Kentia Belmoreana, per dozen	5 0- 8 0	Solanums, 48's, per dozen	8 0- 9 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0	Spiraea, white, 32's per dozen ..	6 0- 8 0
— — larger, per doz. ..	18 0-36 0	— pink, 32's, per dozen	9 0-12 0
Latania borbonica, per dozen ..	12 0-30 0		

REMARKS.—The quality of pot Chrysanthemums has improved, but the prices are still very low and the supply by far exceeds the demand. Pink and white Ericas are more attractive, there being an improvement in their quality, and the prices realised are better. Solanums are the latest addition in this department, but at present they are only arriving in small numbers. Amongst Ferns are to be noticed Asplenium, Nephrolepis exaltata, N. todeoides, N. Whitmannii, N. Scottii, and several varieties of Pteris and Adiantum. They are all healthy and well-grown plants. The Palm trade is practically at a standstill.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s.d. s.d.
Apples, English dessert, per ½ bush.	1 3- 2 0	Grapes: Gros Maroc, per lb. ..	0 4- 1 0
— cooking, 1 bush.	1 6- 3 0	— Muscat of Alexandria ..	1 0- 1 9
Bananas, bunch:		— Canon Hall, per lb.	1 0- 3 0
— Double Ex. ..	8 0-0 0	Lemons, Naples, per case ..	16 0-20 0
— Extra	7 0-7 6	Melons, English ..	1 6- 2 0
— Medium ..	6 0- 6 6	— Valencia, per case	12 0-14 0
— Giant	9 0- 9 6	Peaches, English, per doz. ..	1 0- 8 0
— Extra-medium	6 0 —	Pears, English, ½ sieve	5 0- 7 0
— Red, per ton ..	£20 —	Plums, English, per ½ bushel ..	3 0- 5 0
— Jamaica, p. ton	£15 —	Walnuts (English), per doz. lbs. ..	5 0- 6 0
Blackberries, per lb.	0 2- 0 3		
Cobnuts, per lb. ..	0 5 —		
Damsons, per ½ sieve	1 6- 2 0		
Figs, English, per doz.	1 0- 2 0		
Grapes: Black Hamburgh, per lb.	0 4- 1 0		
— English, Gros Colmar, per lb.	0 6- 1 0		

REMARKS.—The supplies of both cooking and dessert Apples continue to be very heavy. There is also a good supply of English Pears, and some from California, the majority the variety Beurré Hardy. The following English Plums are available:—Monarch, Black Diamond, Pond's Seedling and Bush. Damsons are very plentiful. Fruits of Coe's Golden Drop from California are arriving in splendid condition. There is still a plentiful supply of Peaches, grown both indoors and out. English, Guernsey, Dutch and Lisbon growers are sending large quantities of Grapes. There have been less Melons and Figs on the market this week. Very fine specimens of Cobnuts and Walnuts are now available. Enormous quantities of Tomatos from home growers, and from Guernsey and Holland, are arriving. Cultivated Mushrooms are very scarce.—*E. H. R., Covent Garden, September 16, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, ground, per ½ sieve ..	5 0 —	Mushrooms, cultivated, per lb...	2 0- 2 6
— Globe, per doz.	4 0- 5 0	— Buttons ..	2 0- 2 6
Beans, Scarlet Runner, per bushel	2 0- 2 6	Mustard and Cress, per dozen punnets	0 10- 1 0
Beetroot, per bushel, long ..	3 0 —	Onions, per bag ..	5 0 —
— round	2 0 —	Parsley, per dozen bunches ..	1 0- 2 0
Cabbages, per tally	8 0-10 0	Peas, English, bushel	5 0- 6 0
Carrots, per doz. ..	1 0- 1 3	Sage, per dozen ..	2 0- 4 0
Celery, per bundle	1 0- 1 6	Spinach, per bushel	2 6- 3 0
Cucumbers, per flat	4 0- 5 0	Tomatos, English, per doz. lbs. ..	1 9- 2 3
Garlic, per lb. ..	1 0- 1 3	— seconds ..	1 0- 1 6
Horseradish, per bundle	3 6- 4 0	Thyme, per dozen bunches ..	2 0- 6 0
Leeks, per dozen ..	2 0- 3 0	Turnip, English, per dozen bunches	1 6- 2 6
Lettuce, English, Cos, per doz.	1 0- 1 6	Watercress, per doz.	0 4- 0 6
— — round, per doz.	1 6- 1 9		
Marrows, per tally	5 0-10 0		
Mint, per doz. ..	2 0 —		

REMARKS.—The supplies of vegetables are limited, and consequently higher prices are being realised.—*E. H. R., Covent Garden, September 16, 1914.*

New Potatos.

	s. d. s. d.		s. d. s. d.
Bedford	3 0- 3 6	Kent	3 3- 4 0
Blackland	2 9- 3 3		
Lincoln	3 0- 4 0	Essex	3 0- 3 6

REMARKS.—No improvement in trade, which is still slow, and prices remain about same. There are good arrivals. *Edwin J. Newborn, Covent Garden and St. Pancras, September 17, 1914.*

ANSWERS TO CORRESPONDENTS.

ADDITION TO GARDEN: *A. D.* As your letter gives no clue to the locality, soil, or aspect of the proposed extension we can offer you only general advice. Rather than divide the rockery into two separate portions, as shown in your sketch plan, we should prefer to connect them, making the connecting link lower and narrower than the two main parts. For the hedge, Thuya gigantea is a suitable evergreen, or if you prefer a flowering shrub Berberis Darwinii or B. stenophylla would be successful, and such trees as Mountain Ash Cherries, Robinia pseudacacia and Cercis Siliquastrum may be associated with it. At the tennis lawn boundary a Yew hedge, with two or three recesses for seats, would provide seclusion for the players, and the other side of the hedge would make a charming background for a flower border, but the plants should not be planted so as to grow close against the hedge. Herbaceous borders at the sides of the new garden, as indicated in your letter, could be made attractive. As this will be of only moderate length the outline should be straight, and if a bold arrangement is desired the borders should be not less than 8 feet wide. As we do not know your taste, or at what season you wish the borders to be most attractive, a list of plants would not be of any service. You will be able to select them from the nurserymen's catalogues. The sketch you enclose shows no provision for gravel walks. These might well adjoin the flower borders and encompass the rockery.

BEGONIAS.—*A. E. M.* Begonia Bertinii, B. Major Hope, B. Hampton Court, B. phosphorescens, B. Count Zeppelin, and B. fulgens all belong to the tuberous-rooted section, and are used for summer bedding. Although B. fulgens is more generally seen as a greenhouse plant and comes true from seed, the usual method of propagation is by cuttings; this to have the stock true for bedding schemes. The tubers should be started in heat during the spring, when cuttings may be obtained, or the tubers if they have several shoots may be cut up into separate plants. Begonia Triomphe de Lorraine, B. Gloire de Châtelaine and B. Bonfire are all fibrous-rooted plants, and are garden forms of B. semperflorens. They come practically true from seed, but when used for bedding schemes it is usual to propagate them during early spring from cuttings taken from plants lifted and potted up the previous autumn. The cuttings must be young basal shoots, for although flowering shoots root readily they very seldom break or throw fresh growth from the bases, and therefore are useless as plants. They, of course, require to be started in heat, early in the New Year, to produce a crop of young shoots for cuttings, which will root readily in a warm propagating case.

BLACK WALNUT AND HICKORY: *C. R.* The Black American Walnut is Juglans nigra, whilst the Hickory is Carya alba, one of the members of a nearly allied genus. Neither tree is well suited for the climate of this country, the Black Walnut being usually tender in a young state. Moreover, a rich loamy soil—in fact, a Wheat soil—is required to grow either tree to perfection, and the young trees are difficult to transplant owing to their strong tap roots. We do not recommend the Black Walnut to be planted for purely economic purposes, and as to Hickory it is only useful for variety.

COMMON FUNGUS: *A. J. G., Calne.* The fungus is Peziza vesiculosa, which is quite harmless, and is commonly found on manure heaps and richly-manured ground. An application of quicklime will destroy it at once.

DISEASED FLOWER BUDS: *Thrip.* The flower buds have been examined carefully, but there is no trace of any insect pest.

DISEASED TOMATO ROOTS: *Club.* The roots are infested with eelworm and should be burned and the soil dressed with gaslime or quicklime. To prevent mildew on the leaves of Tomatos spray the plants with liver of sulphur and drench the soil with the liquid.

MELON PLANTS DISEASED: *Inquirer.* No disease of any kind is present. The injury is the result of some condition that can only be determined by an inspection of the plants.

NAMES OF FRUITS.—We are anxious to help correspondents as far as we can consistently, but they must bear in mind that such work entails considerable outlay both of time and money. Correspondents should never send more than six plants or fruits at one time. They should be very careful to pack and label them properly, to give every information as to the county the fruits are grown in, and to send ripe, or nearly ripe, specimens, which should show the character of the variety. By neglecting these precautions correspondents add greatly to our labour, and run the risk of delay and incorrect determinations. When sending such fruits as Peaches and Nectarines it is advisable not to pack them with such fruits as Apples and Pears, otherwise they are liable to be so badly crushed that it is impossible to identify them. It is also important when sending Peaches and Nectarines to state the size of the flower and to send a shoot of the tree, as the glands have much to do in the determining of the varieties. Correspondents not answered in one issue are requested to be so good as to consult the following numbers.—*C. H. C.* Peach Crimson Galande.—*A. G.* Apples: 1, Rival; 2, Bess Pool; 3, Charles Ross; 4, Blenheim Pippin.—*Mrs. Hope.* Pear Marie Louise. An excellent mid-season variety.—*W. G. Parsonage.* Pear Duchesse d'Angouleme.—*A. L.* 1, Olivier de Serres; 2 and 3, Beurré d'Amanlis.—*J. M.* 1 and 32, Louise Bonne of Jersey; 2, 14 and 51, Williams' Bon Chrêtien; 17, 21 and 38, Marie Louise; 10, Beurré Superfin. Remainder will be named in following numbers. See note above.

NAMES OF PLANTS.—*E. W. F.* Maackia amurensis, so-called Cladastris amurensis.—*A. B. Hepburn.* Liriope spicata.

ORANGE GRUB ATTACKING ROSEBUDS: *T.* The grubs in question are the larvae of minute flies belonging to the family Cecidomyidae (Gall midges) and seem to be identical with the species recorded as attacking newly-budded Roses in France and Germany, viz., Clinodiplosis oculiperda. The adult flies appear from June to August, and the females lay from six to twelve eggs in each bud. One writer recommends woollen or cotton thread for fastening the buds, soaked in turpentine, with naphthaline and linseed oil, dried before using.

PEACH WITH SPLIT STONE: *H. D., Ltd.* The cause of the stone splitting in the Peach sent is that the soil was too wet when the fruit was setting.

POND WEED: *W. A. J.* The weed on your pond is Anacaris Alsinastrum, or Water Thyme, called in America the Canal Choker. It should, if possible, be raked out, as the sulphate of copper solution is not suitable for such a plant as the one that has to be dealt with.

TOMATO CHUTNEY: *Toms.* Take of green Tomatos, 4 lbs., Apples and Onions 1½ lb. each, Sultanas ½ lb., sugar ¾ lb., salt 1 oz., and peppers and Chilies to taste. Slice the Tomatos, Apples and Onions, and boil these with the other ingredients for four hours in 1½ pint of vinegar. The preserve will keep in a good condition for an unlimited period.

VIOLET LEAVES DISEASED: *A. H.* Red spider is present on the leaves in large numbers. The plants should be sprayed with a solution of quassia, care being taken that the water is applied with considerable force to the under-surface of the leaves.

Communications Received.—J. S. M.—W. G. M.—W. B.—C. R.—G. S., Elgin—C. W.—H. C.—F. N.—M. R. and Co.—W. B.—W. E. P.—Club—C. P. R.—C. T.—D. R. W.—J. F.—H. D.—C. R.—R. W. C.—T. A. S.—A. J. C.—P. P.—J. G. W. (with thanks).

THE
Gardeners' Chronicle
No. 1,448.—SATURDAY, SEPTEMBER 26, 1914.

CONTENTS.

Albumen in seeds, effects of removing 224
Apple Rev. W. Wilks .. 225
Belgian exports .. 224
Belgium's contributions to pomology 220
Californian Seeds .. 227
Campanula velutina .. 214
Chimonanthus fragrans 217
Farrer's, Mr. Reginald, explorations in China 213
Fern frond, the 217
Foreign correspondence—
  Home of Primula Palinuri 216
French crops 224
Fruit show, R.H.S., abandoned 223
German seeds 224
King's Oak, Tilford .. 224
London Kitchen Gardens 224
Moles as pest-destroyers 224
Nursery notes—
  Robert Veitch & Son, Exeter 214
Obituary—
  McElvery, John .. 228
Paeonia lutea 225
Peas, late 225
Plum Jefferson as a pot plant 215
Psoralea bituminosa .. 225
Societies—
  Bolton Hort. 216
  Manchester & North of England Orchid 227
  National Chrysanthemum 227
  National Sweet Pea .. 224
  Royal Horticultural .. 225
  United Hort. Benefit and Provident .. 227
Soya Bean as a vegetable 224
Trees and shrubs—
  Chinese Vines .. 213
Tulip tree at Kew destroyed by a gale .. 216
War items 224
Week's work, the—
  Apiary, the 219
  Flower garden, the .. 219
  Fruits under glass .. 218
  Hardy fruit garden .. 218
  Kitchen garden, the 219
  Orchid houses, the .. 219
  Plants under glass .. 218

ILLUSTRATIONS.

Campanula velutina 214
Crinum Moorei album 223
Dahlia White Star 221
Plum Jefferson as a pot tree 215
Primula Palinuri, 217 ; the home of 218
Tulip Tree at Kew uprooted by a gale 216

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

II.—IN KANSU.

In mid-April the Plums and Apricots are in full bloom and the hillsides are nebulous with soft blurs of white or pink. But for a long way down towards the rising ranges rich loëss soil still prevails, with the result that the hills are tilled almost to their tops by the economical Chinese, who terrace little plots out from even the most forbidding slopes or pinnacles. There is small hope here of any new sensational beauty, and the great charm of the road lies in the clean, mud-built villages that nestle at intervals along the riversides, embowered in Willow and Lombardy Poplar, and set in a circumambient haze of Plum and Apricot blossom that seems almost luminous in its contrast with the young green of the Poplars. Here, too, are little garden closes, containing special treasures in the way of flowering shrub or tree. Especially charming are the slender-growing forms of Prunus, making round-headed masses of 4 or 5 feet high, with delicate branches weeping far and wide beneath the weight of their profuse constellations of flower. But the greatest gem of all is a Viburnum—not of the kind that is now so diligently advertised and praised, presenting usually the rusty appearance of a pew-opener in distressed circumstances, but a miracle of prodigal flower in corymbs like some small and blushing rosy Lilac, diffusing far and wide the most intoxicating scent of Heliotrope. This delicious plant was soon discovered wild, in scanty coppices by the roadside as it wound through the hills, and with it a Daphne, probably D. retusa, small mounds and balls of blossom, which, at first seeming scentless, ere long developed the typical heavy and acrid sweetness of the race.

By now the hills were wilder, tipped with Pines and sometimes clothed in copses where wild pheasants clucked. On these the Daphne was so abundant as to tinge the slopes, and all the woodland was so dense with seven-and-sixpences that, as each hideous Rubus tore one's legs and Clematis encumbered them, one wished that they were far away in England, glutting the zeal of enthusiasts, instead of thus wasting their ugliness on the desert hills of China. Lurking among these was a dainty Epimedium, frail and snowy, a golden, single-flowered little Cremanthodium, a Gerbera like an inferior dead-white Bellis perennis, and that glorious Lithospermum that I saw turning the earth to sky in Japan. But copses in these hills are the exception rather than the rule : soon we were on open slopes again, climbing over tilled terraces, beneath mountain masses dark and austere as the Langdales above Grasmere. Here it was that, on high declivities to which cultivation had not reached, another treasure leapt to view, growing abundant in low sheets and cushions in the hard, hot loëss soil at considerable elevations. This new delight may be best pictured as a golden-citron Daphne or Jasmine, forming blots and blotches of luminous colour as brilliant yet gentle as that of Douglasia Vitaliana, which its closely-matted habit and profusion of blossom no less help to recall. It is, of course, neither Jasmine nor Daphne ; its neat habit and rare loveliness are the only certain points of its character as yet. Nor were its carpets of bland, lemony stars in little loose heads without their match, for its slopes were shared by a brilliant Gentian of, I fear, annual persuasion. This grows in neat, dwarf tuffets, almost suggestive of G. pyrenaica ; the flowers, too, are not unlike—wider open, though, in flaring shades of amethyst, violet and sapphire, with the inter-lobar folds (as often happens in Asiatic Gentians) so amply developed as to make the flower's face like a ten-pointed star.

From this point we descended towards a river running like a thread of silver among its shingles far beneath our feet, in a deep valley of ranges wild and rugged. All over Kansu, by the highway sides and in every open waste place, grows Edelweiss as common as Filago and nearly as ugly ; but on this descent there was a point, in a small grave copse, where its crowded clumps of grey flannel made a soft effect amid the dazzling firmament of the Lithospermum. Mounting again, on the other side of the river, we climb more steeply and higher than before and found a fresh succession of delights. In the first place were wide, flowering masses of Iris tectorum (our first sight of it in flower, though it had been abundant in the wild gorges of the hills behind us, above watercourses that flowed over strata so artificial as to suggest cement-built rock gardens and cascades of the most imposing order ; and above this the mounded, snowy masses of Rosa Banksiae were lavishing their scent, which to me is the most intoxicatingly delicious of all fragrances, hovering, as it does, on the edge of the intolerable. Still higher, and the scrub tailed away into open moorland, now all blue with the uncounted millions of a small ensata Iris. At one point, indeed, clumped densely in the sward round a little farm, they made a crazy effect, as if one were in a Westmoreland orchard, and all the Daffodils in their colonies had gone blue.

After this there were more passes, and more valleys, with all their usual adornments, and more besides. At one point occurred a hanging copse, impending over a flat place in the river bed, where, at the junction of streams, the people come to market from far and near. This coppice rustled with white points in the wind ; from afar one wondered whether the sheen were not that of ruffled Poplar tips. It was only at the eleventh hour, running madly up, that one saw the tossing snow to be all Exochorda, flowering from the end of every shoot. Yet even Exochorda must yield to Dipelta. Dipelta helps to build the coppice in all these parts ; it grows with grace inimitable, and its slender sprays are bowed beneath the weight of innumerable pearl-white blossoms, like sainted Weigelas freckled in the throat with gold, and each dainty, long-tubed bell escaping from a two-fold bag suffused with red. No shrub can beat Dipelta for beauty and elegance and charm ; it is sweetly scented, too, and so abundant and so universal that it rouses the highest hopes of its adaptability to English gardens. One evening I went up a long wooded slope clothed in its heavy-laden boughs, and not even those entangling branches could cloy one's eyes with its elfin loveliness. I was climbing after a blushing blotch far up in the woodland ; this proved a deeply rosy Pyrus of bright charm, and on the way I had my fill of Epimedium, and also found a Cypripedium of the calceolus type, but so immature that I could discern little more of it but that one stem was bearing three buds which on dissection appeared likely to be of Calceolus design. As I descended through the tangle I saw afar, upon an opposite slope, a number of bright, white blobs, so large and definite even in the distance that it was impossible to believe them flowers, but they must surely be fragments of wool or white paper lodged amid the brake. However, to slip no chance I waded through the surf of thorns from hill to hill. Nor did I need near approach to discover what it was that I was hunting, for there, balancing rarely amid the brushwood, shone out at me the huge expanded goblets of Paeonia Moutan, refulgent as pure snow and fragrant as heavenly Roses. It grew tall and thin and stately, each plant with two or three thin, upstanding wands tipped by the swaying burden of a single upright bloom with heart of gold, each stainless petal flamed at the base with a clean and definite feathered blotch of maroon. All over these ranges, indeed, the type of P. Moutan is pure and snowy ; in others it is red or magenta. Greater luck to this type, then ; it is one of the most sensational of glories and for ever makes one's heart go thump anew each time one sights its wide-frilled chalices of whiteness dotting the scrub or distant sward, more rarely, indeed, but with the same effect as its cousin Anemone alpina on the upper turf of Mont Cenis. *Reginald Farrer.*

---

* The first article by Mr. Farrer was published in the issue for September 12.

TREES AND SHRUBS.

CHINESE VINES.

Considerable numbers of ornamental Vines have been introduced from China during the last ten years or so, several of which are of merit, and form a welcome addition to our list of hardy climbing plants. The following have been thoroughly tested here, and can be confidently recommended for hardiness and freedom of growth.

Vitis armata.—This is a handsome, strongly-growing species, the stems and leaf-stalks covered with curious hook-like processes, which may be best described as soft, green prickles. The leaves are about 5 inches long by nearly 4 inches in width, heart-shaped in outline, of a bronzy-green shade when young, changing to a deep green when mature. In autumn they turn to a rich crimson colour. Here we have found it to be one of the strongest vines, and so far it has proved to be thoroughly hardy.

V. Henryana.—Though this species has withstood the last four winters here without injury, I should not care to recommend it for a cold district, unless it can be given a sheltered position. It is a plant of a medium rate of growth, with stems and petioles of a light-red colour. The leaves are composed of five leaflets, the central three of which are about 4 inches long, the other two being somewhat shorter. Each leaflet is linear-ovate in outline, coarsely dentate on the margins of the upper half, the lower part being entire, of a peculiar purplish-red shade of colour, with a prominent silvery-grey midrib. The upper surfaces have the appearance of being covered with a kind of bloom, beneath which they are red, glabrous, and shining. There is no pronounced autumn colour.

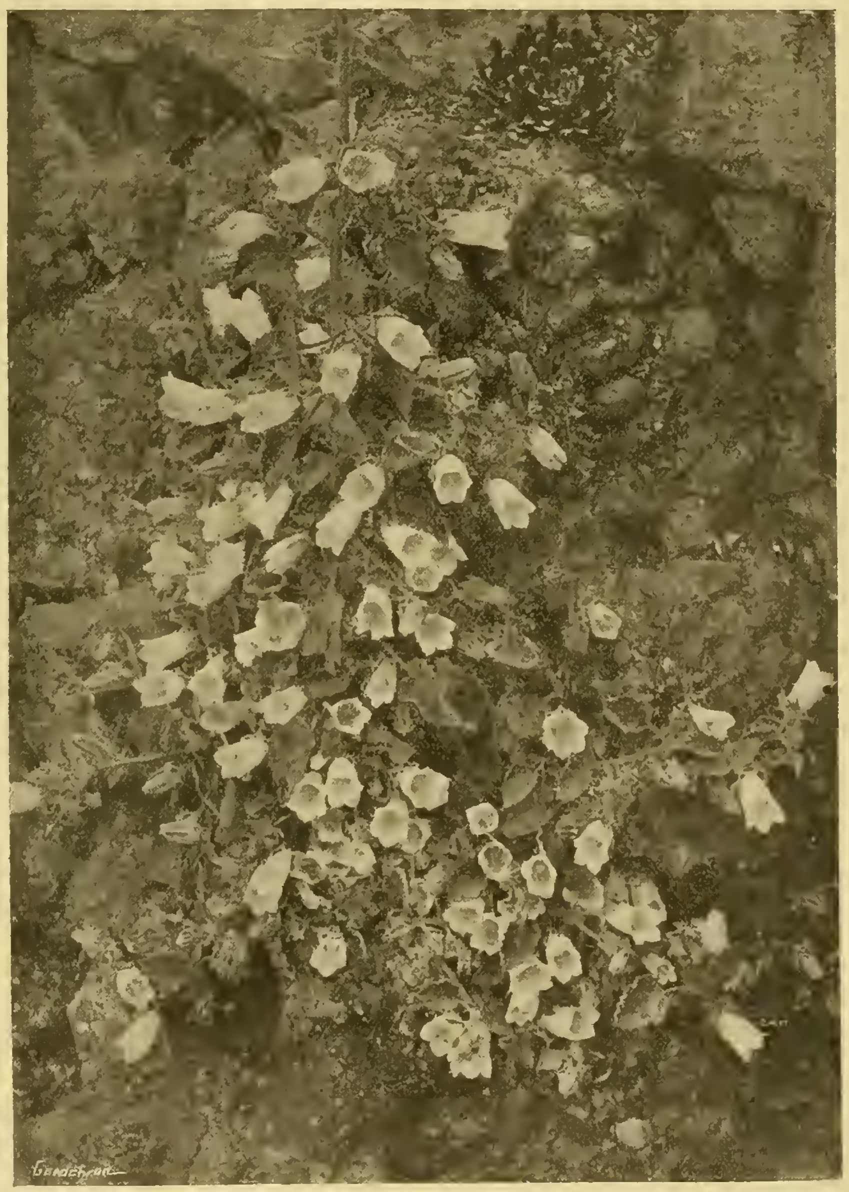


Fig. 84.—Campanula velutina: flowers cream-coloured, tinted with pink.

V. Thomsonii.—This is a strongly-growing, thoroughly hardy species, that can be recommended for positions required to be quickly covered. The leaves are compound and digitate, composed of five leaflets, the central one being the largest. In a young state they are of a bright claret-purple shade, changing to a greenish-purple with age, the midrib and margins being purple throughout. The under-surfaces are bright purple at all stages, and shine as if polished. The colouring is constant during the summer, changing in autumn to a deep purplish-red.

V. Wilsonii.—This species well deserves the honour of bearing the name of the intrepid collector. The stems are slender, of a bright, shining green hue, and clothed with triangular leaves, 3 inches long by 2 inches wide, dark, metallic green in colour, and shining on both surfaces. The foliage is very dense and neat, and the plant can be recommended for the clothing of pillars, as it is a fairly rapid grower, and soon covers a large space. *J. Clark, Bagshot, Surrey.*

CAMPANULA VELUTINA (SYN. LANATA).

This striking Bellflower forms an ideal subject for planting in a hot, sunny crevice in the wall garden, or in a fissure between some steeply inclined rocks in the Alpine garden, where its main upright stem, and many lateral horizontal ones clothed with the velvety foliage are exhibited to the greatest advantage.

The flowers are cream-coloured, sometimes tinged with pink, especially towards the mouth, suggesting those of Campanula barbata, although in C. velutina the blossoms are held more or less erect. The specimen illustrated in fig. 84 shows a plant growing on my wall; it remained in flower for seven or eight weeks, and is now only just over, the late and continued display rendering it a very desirable plant. A well-drained, gritty soil, containing plenty of humus, suits it well. The plant dies after flowering, usually in the second year, but it may be propagated freely from seed. *R. A. Malby, Woodford, Essex.*

NURSERY NOTES.

MESSRS. ROBERT VEITCH AND SON.

On the eve of the concluding sale of Messrs. James Veitch and Sons' nursery stock especial interest is attached to the Exeter firm of Veitch, for it was in the "Ever Faithful" city that the first Veitchian nursery was formed. The first "nurseryman Veitch" was Mr. James Veitch, whose father, John Veitch, came to Broad Clyst, Devon, from Scotland early in 1800, and became factor to Sir Thomas Acland at Killerton, near Exeter. James Veitch started a nursery business at Broad Clyst, which, in 1832, he transferred to Exeter. The site of the original nursery in Topsham Road, Exeter, has long since been built upon, but Robert Veitch, who returned from South Africa in 1857, and succeeded his father six years later, then selected, with great acumen, the site in New North Road as his headquarters. Here, on a hillside of rich Devon soil, within a few minutes' walk of two main-line railway stations, the business is still carried on by Mr. P. C. M. Veitch, who has controlled it since 1880. During the previous twelve years Mr. Veitch was gaining valuable experience at Chelsea and by travelling in company with the late Mr. F. W. Burbidge in Australasia and Borneo. This trip is described in Burbidge's *Land of the Midnight Sun.* As the growth of the business demanded more ground, land was acquired at Exwick, at the western border of the city, and at Exminster. The latter nursery is a most delightful spot, which possesses the deep, rich, red soil that makes Devon so famous for its Apples and Wheat. From the fertile hillside entrancing views of the broad estuary of the Exe and the wooded hills on the opposite shore are obtained. Small wonder that Mr. Veitch elects to live there during seven or eight months of the year, although it means rising an hour earlier than when he is in his Exeter home, for, he remarked, "to be successful a nursery business must be a personal affair, and I see every order that arrives." High up on the hillside most of the hardy fruit is grown, and there the bushes and standards become sturdy and well ripened. During the past few weeks I have seen enormous quantities of Apples in most of the southern counties, but nowhere have they been so fine as at Exminster. The very large quarter devoted to this fruit was filled with splendid trees, bushes, standards and cordons, and not a trace of American blight could be seen. Pears, Plums, Peaches, and dwarf fruits are also equally well grown. In this nursery, where all through the growing season they are under Mr. Peter Veitch's eye, are grown the tree and shrub varieties and novelties. These include such little known, but desirable, species as Leucothoë, Daviesia, Adenocarpus anagyrus (A. frankenioides), an evergreen shrub from Teneriffe, which bears attractive, Pea-like flowers for a long period; Cassia marylandica, a beautiful herbaceous species which flowers profusely on strong growths; Daphne retusa, and D. Dauphini. In a cool, moist spot a clump of Spartina cynosuroides aurea, a Rush with leaves a yard high and beautifully striped with gold, is a particularly desirable plant for the water and bog garden in mild districts. This plant is also interesting in that it is probably the only member of garden value in a fairly large genus. In the lower part of this nursery the Himalayan Rhododendrons, for which the West of England is famed, are grown. They are practically a race apart from the ordinary garden hybrids of R. ponticum, R. arboreum, and R. catawbiense, which are such popular flowering shrubs. Nearly all the Sikkim Rhododendrons may be identified at sight by their beautiful foliage. No other flowering shrub possesses such delightful charm in this respect. Quite a long list of species and varieties which have the fascinating "bloom" and brightly-coloured leaf stalks might be made, but space permits the naming of only the two best known species, R. ciliatum and R. Roylei. These Rhododendrons are much hardier than is generally supposed, and even though the trusses of bloom are sometimes spoilt by early frosts they are well worth growing as foliage shrubs. On the opposite side of the walk there is a very large collection of Gladiolus hybrids, chiefly of Groff's raising, which are of great excellence. Japanese Irises, Meconopsis aculeata, Kniphofia Northiana and many new Primulas and Phormiums luxuriate in this "moist bottom." At the Exwick nursery Conifers and Roses are the most important features, but there also are grown a goodly quantity of hardy fruit and the principal vegetable novelties. The last include Cucumber Emerald Gem, which the R.H.S. reported, after trial, as being "an excellent variety, smooth, with practically no spines, no neck, of the Matchless type." A good new Potato, named "Great Scot," of which 179 lbs. of good table-sized tubers were recently dug from 3 lb. of sets, is also grown there. The Conifer collection includes a great variety of golden-foliaged sorts, which even during the present hot and dry season have shown no signs of "burning." Of these Cupressus obtusa Crippsii is excellent. Amongst the rarer sorts, Abies Webbiana, the longest-leaved Silver Fir, the delicately-graceful Tsuga Brunoniana, Podocarpus chiliana, Sequoia sempervirens albo-spica, Juniperus pachyphlaea and Dacyridium Franklinii may be named. Other trees include Quercus alnifolia, a species appropriately named, which bears an attractive, brown tomentum on the undersides of its leaves; a Mountain Ash, with clear golden fruits (Pyrus Aucuparia fructu luteo), Lucombe and Cook Oaks, Golden Beech and Holly "Golden King" loaded with fruits. Collections of Acacias, Pittosporums and shrubby Veronicas are of especial interest, as also are the flourishing little bushes of Mitraria coccinea, Romneya tricocalyx and plants of Echium Wildpretii, that beautiful Canary Island plant, which was the subject of a coloured illustration in the *Gardeners' Chronicle* for October 26, 1912.

At the Exeter nursery the stove and greenhouse plants are grown, and, as may be expected, it is well stocked with the half-hardy subjects which delight gardening visitors to the West of England. Many of these plants and shrubs are grown in flower-pots for convenience of delivery at any season, and although, in consequence, they have not a riotously vigorous appearance, they evidence high cultivation and skilful attention. That Messrs. Robert Veitch possess the true Exmouth variety of Magnolia grandiflora is evident from the fact that bushes only 3 feet high already bear several flowers. No one planting these will have cause to wait and wonder why their Magnolias do not flower. Probably the rarest tree in the nurseries is Fagus antarctica, which is here represented by a splendid young tree. A Pomegranate, labelled Punica rubra, instantly attracted my attention. Its foliage differed but little from that of P. Granatum, but the brilliant, scarlet flowers were fully 3 inches across. What a never-to-be-forgotten sight a large tree of this variety in full bloom would be. My note-book contains names and remarks of other valuable and interesting plants—of Crinum yemense, a beautiful, half-hardy species which bears many-flowered umbels of fragrant, white flowers; of Pentstemon cordifolius on a wall almost smothered with scarlet flowers, of a bush of Bignonia speciosa flava, bearing racemes of yellow flowers tinged with red, and of a standard Catalpa japonica with numerous long, slender, Bean-like fruits hanging from it, but enough have been enumerated to show the variety of the plants grown in these famous nurseries and the enterprise of Mr. Peter Veitch. *A. C. B.*

JEFFERSON PLUM AS A POT PLANT.

The cultivation of fruit trees in pots has been practised for many years, nevertheless the system is not so extensively employed in gardens as might be expected from the favourable results obtained, even without much fire heat. Orchard-house fruits grown in pots are always of superior quality. Stone fruits are especially adapted to this treatment, and, so far from the trees quickly becoming exhausted, as might be expected, they continue to grow and fruit well for many years. At the nursery of Messrs. Thos. Rivers and Sons, Sawbridgeworth, there are to be found pot trees of great age still in vigorous health and fruiting freely; one of these—a Magdalen Peach—being thirty years old. At Mr. Leopold de

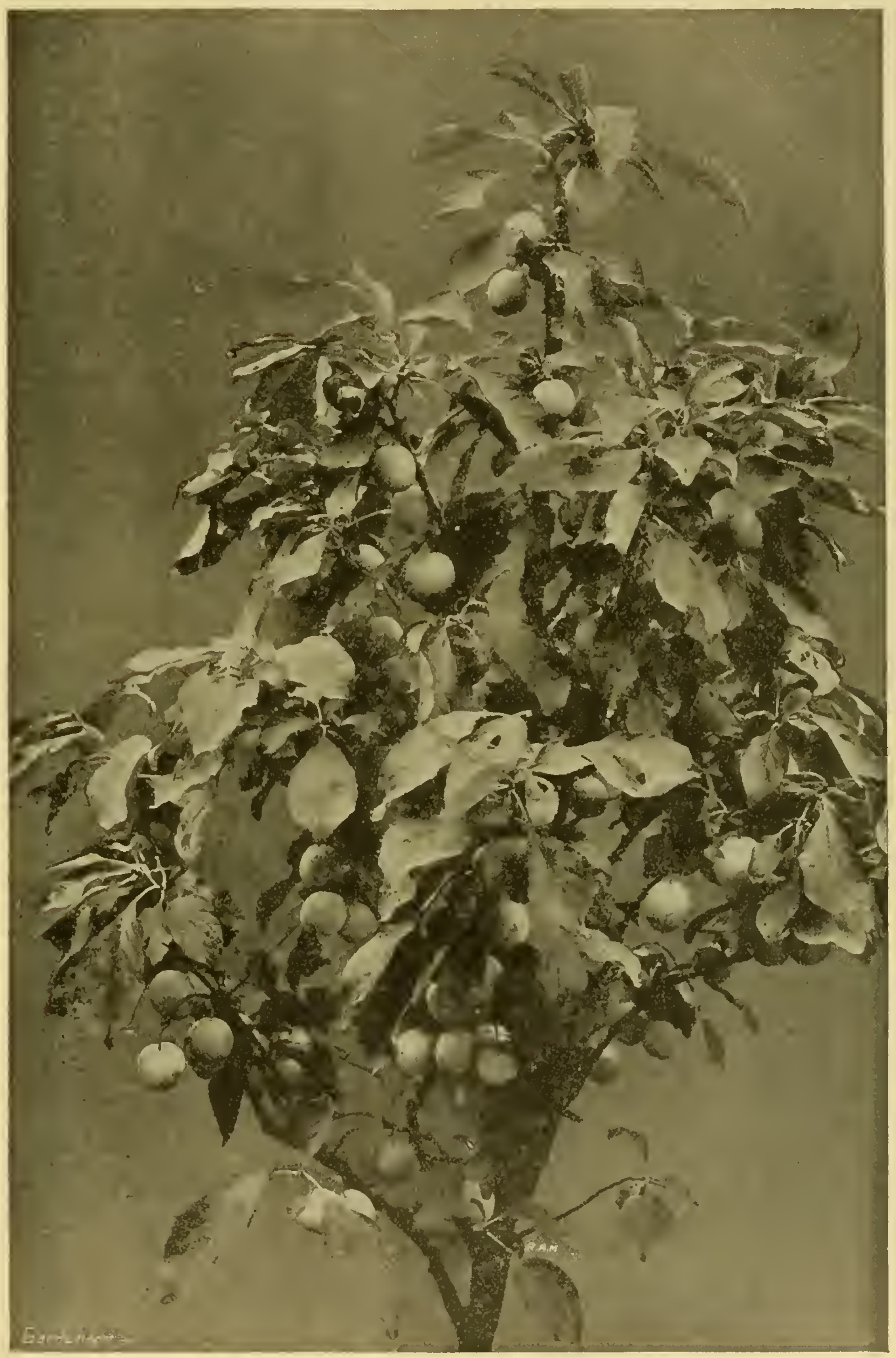


Fig. 85.—A pot specimen of the Jefferson plum.

Rothschild's gardens, Gunnersbury House, Acton, and other establishments similar success is obtained. The tree illustrated in fig. 85 is a pot specimen of Plum Jefferson, exhibited by Messrs. Jas. Veitch and Sons at the meeting of the Royal Horticultural Society on July 28, 1914. The variety came originally from the United States, and was named after President Jefferson. It is generally acknowledged to be one of the finest dessert Plums, being of rich flavour and good appearance, and possessing general qualities which combine to place it in the first rank.

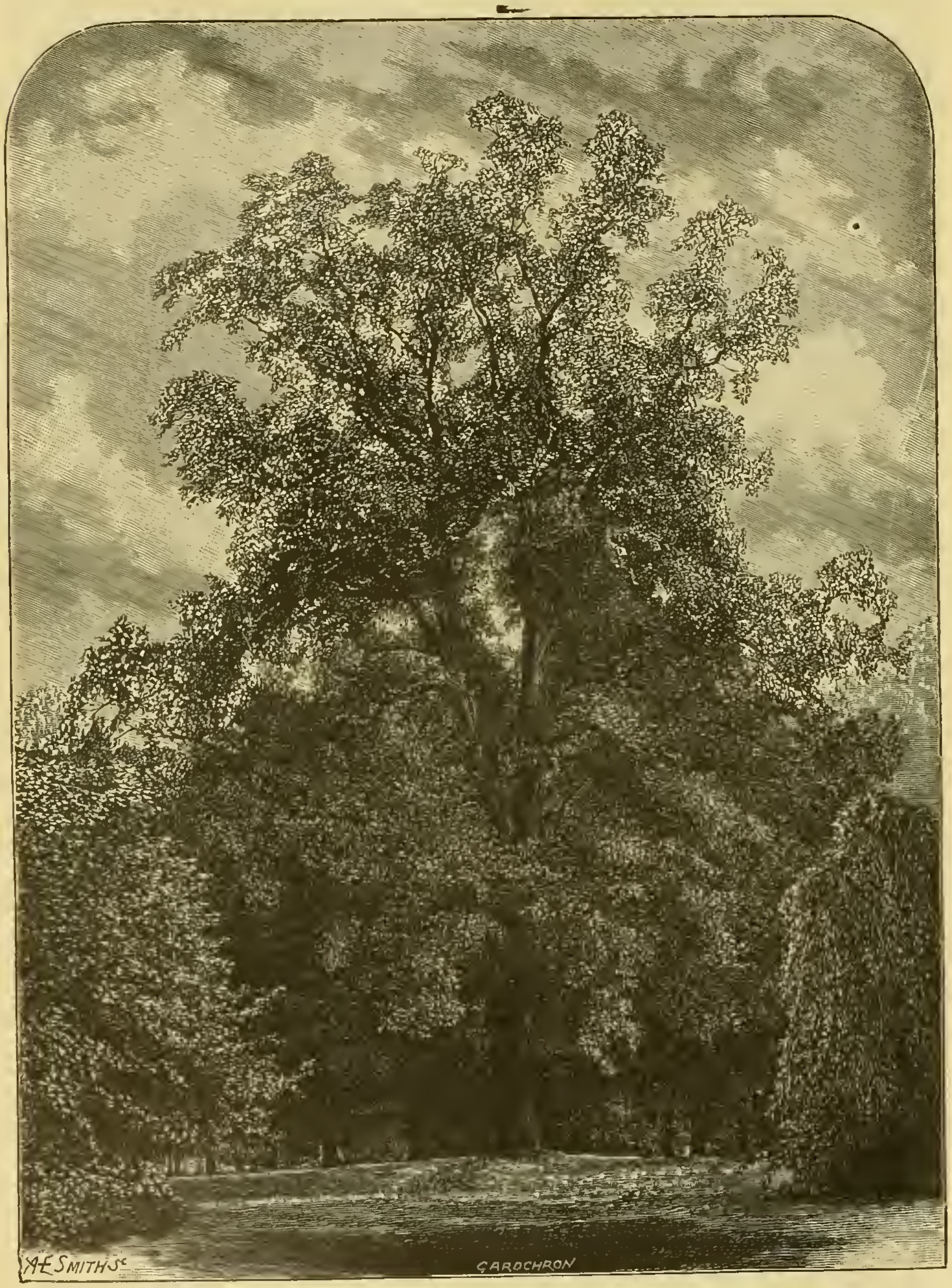


Fig. 86.—tulip tree at kew uprooted by a gale in march last.

Bolton Chrysanthemum Society.—At a special general meeting of the Bolton Horticultural and Chrysanthemum Society, held on the 17th inst., it was decided by five-sixths of the members present to hold the annual show, and that the prize money as scheduled be reduced 25 per cent. It was also decided to hand over any profits to the local Mayor for the National Relief Fund, and a special flower stall will be arranged for the purpose of assisting the Fund.

THE LARGE TULIP TREE AT KEW.

On Monday, March 16, the fine old Tulip tree which stood at the north end of the Rhododendron Dell (see fig. 86) was uprooted by the great gale. The tree first began to show evidences of declining vigour about 20 years ago, and latterly its roots have been attacked by a parasitic fungus. This, together with the softening of the earth, due to the excessive rainfall in early March, reduced its hold of the ground so much that when the storm reached its climax about 11.15 a.m. the tree fell with a crash, its great limbs snapping like Carrots Its loss is a great one to Kew, for although not the largest, it was one of the largest trees in the British Isles, and, from the position it occupied, the most famous. Its measurements, taken as it lay on the ground, were: height, 80 feet; spread of branches, 64 feet; girth of trunk at 5 feet from base, 10 feet. At 15 feet from the ground, just below the first branches, the trunk girthed 15 feet 3 inches. Its age, computed from the annual rings, was about 150 years. It was, therefore, planted in the early years of the reign of George III. It grew, of course, on what were the Richmond Gardens, made so famous by Queen Caroline, queen of George II., and it was evidently planted during the many alterations made by her grandson and Capability Brown (including the formation of the Hollow Walk or Rhododendron Dell) soon after his accession in 1760. Two good-sized Tulip trees and several smaller ones remain in Kew. One of the former stands in the Azalea Garden, the other in the garden of Cambridge Cottage. *Kew Bulletin.*

FOREIGN CORRESPONDENCE.

THE HOME OF PRIMULA PALINURI.

For many years past it has been my desire to see Primula Palinuri (see figs. 87 and 88) in its native habitat; but as it grows naturally in only two places in Southern Italy—and these two close together—I have not before been in a position to fulfil my desire. In April this year, however, I made an excursion to the spot on my way to Piana di Salerno, and, favoured by beautiful weather, made a number of interesting observations. The Piana chiefly consists of wide pastures, on which horses and buffaloes run wild. These pastures are interspersed with large shrubberies of Pistacia terebinthina, then in full bloom, dull purple; the wild Pyrus communis and P. cuneifolia, Cercis Siliquastrum (with a few of the white variety), Myrtus communis, different Cistuses, and some large trees, especially Quercus Robur and Ulmus campestris. Near the pools and streams Alnus incana, Populus and other trees and shrubs are to be found. Large numbers of Iris Pseudoacorus were in flower, and bushes of Tamarix gallica formed considerable shrubberies. These latter were chiefly found near the ruins of Paestum, which is also the home of malarial fever. Beyond the ruins are the mountains, and these are covered with Erica arborea, Cistus salvifolius, C. monspeliensis, Spartium junceum, Calycotome and Quercus Ilex, all in the form of bushes. Erica and Calycotome were in flower.

The chief subjects of culture here are the Olive and the Fig. Very fine specimens of Olives are to be found, well pruned and cultivated; not tall, but very well grown. The Figs are cut very short, the whole of the growth being removed each year. Dried Figs are exported in large quantities. Between the pastures and the end of my trip it was a six hours' railway journey, ever between mountains. When at last the top is reached only a single house is to be seen, which forms the "station"; but when I arrived I found waiting for me the guide and horse I had ordered, and with these I proceeded at once to the village of Palinuri. The road was execrable; a stream of water ran along it, now on one side, now on the other, and frequently in the middle, so that we constantly had to ride through the water. In the winter months the stream assumes formidable proportions, and for weeks together is impassable, so that the inhabitants are entirely cut off for long periods from all communication, especially when the sea is stormy and the little fished-boats cannot navigate the waters. The ride took two hours, but the scenery was wonderful, tall mountains rising on either side, partly cultivated in little terraces, on which Olives, Corn, or Lupins were growing, but for the most part wild, and covered with bushes of Erica and Cistus.

The next morning I was early on the way to find the longed-for Primula Palinuri. I made for some large rocks I had seen, believing that there I should find the plants; and indeed I did see large clumps of it, but found it almost impossible to get at them. At the risk of my life, scrambling on hands and knees, and often hanging over the edge with nothing between me and the rolling sea, some 900 feet below, I did manage to get a few, but very few plants. However, just as my disappointment was at its height a little goatherd hailed me with the words: "Do you want those yellow flowers?" On my replying in the affirmative he told me that near the little port the flowers grow in large quantities. At first I did not believe him, but in any case it was impossible to get any more from the rocks, and those I had possessed very meagre roots. On the morrow, therefore, I shouldered my rucksack, and after an hour's walking I was rewarded by finding myself in the midst of my beloved Palinuri Primrose. There were large colonies of old plants of considerable size, and a number of young seedlings and flowering plants. The flowering period was already over, but many of the plants bore half-ripe seed vessels, of which I collected a quantity. They grow here in pure sea sand, among crumbling sandstone boulders. The place faces east, and only gets full sunshine in the morning; during the summer the soil is quite dry, the foliage falls, and the rootstock is covered by the loose sand. When the autumn rains wash the sand away the leaves again begin to grow and continue the whole winter. I planted a large batch of the plants here at Fratte di Salerno in the spring of 1913 on a rockery, in ordinary soil and facing the full sun. They were mingled with Alstroemerias and were succeeding well; they flowered in February last and now the seeds are ripe. The leaves of the Alstroemerias cover the rootstocks of the Primulas and protect them. I should think that they would do well in England grown in a similar manner, in which case the Auricula of Southern Italy will find a new home in the north. *Willy Müller, Italy, Sept.* 1, 1914.

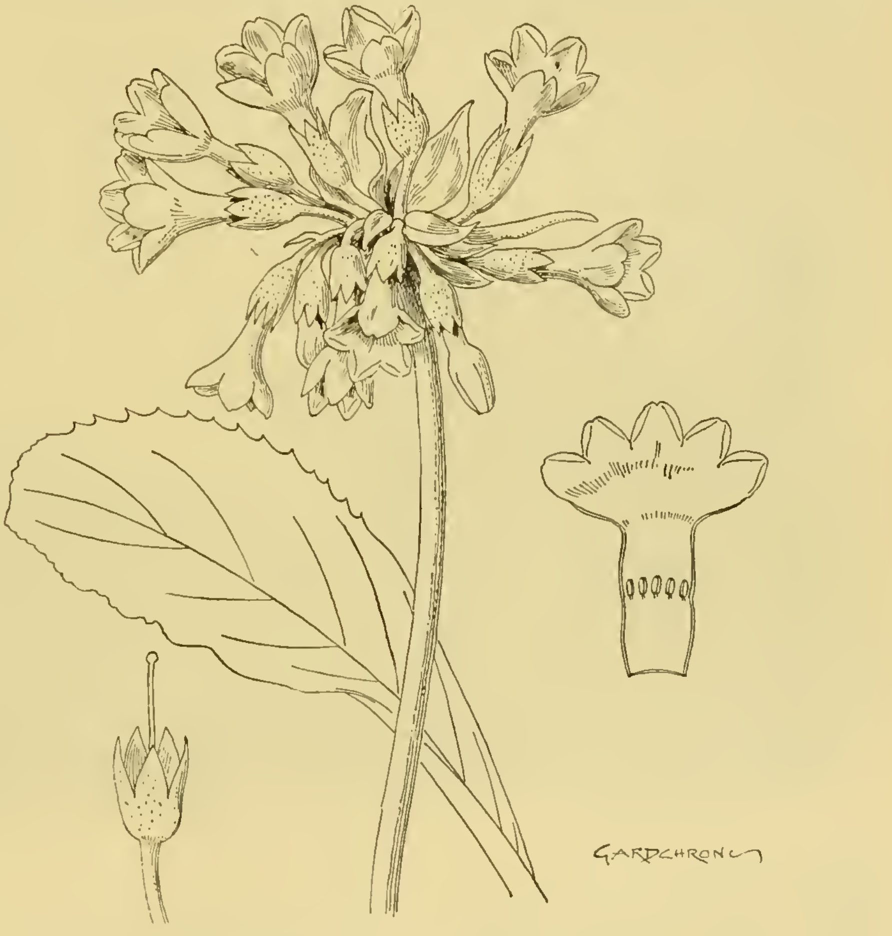


Fig. 87.—Primula Palinuri: flowers yellow.

THE FERNERY.

THE FERN FROND.

Although popularly the foliage of a Fern is regarded as consisting of leaves, like that of plants generally, there are several fundamental differences between a frond and a leaf. As regards their functions, that of the leaf proper is nutritive. By the agency of the leaf the raw materials of the food of plants are combined to form the actual foodstuffs, carbohydrates and proteins. In this function the Fern frond is equally active, and to it we owe the main portion of our coal supply, which consists almost entirely of the carbon absorbed and utilised by the Ferns and their allies of the coal or carboniferous age. The Fern frond, however, performs another function, of which leaves are only capable indirectly in their modified form of flowers, viz., reproduction by the bearing of spores upon their under-surfaces or upon specialised parts exclusively devoted to such functions. Examples can be seen in our native Royal Fern, Osmunda regalis, Blechnum spicant, the Moonwort (Botrychium lunaria), and the Adder's Tongue (Ophioglossum vulgatum), while the other native species bear their spores in dots or lines, in various ways which determine their genera, upon their under-sides. A number of exotic species, and many of our varietal forms, also bear bulbils or embryo plants upon their fronds or frond stalks, but this faculty can hardly be claimed as purely characteristic, as leaves proper sometimes do the same, or at any rate are capable of doing so when some damage interferes with their normal cellular development. The Begonia leaf, for instance, if cut across, develops bulbils on the severed edges, and many bulbous plants, like Hyacinths and Lilies, are capable of being propagated in a similar way. This, however, is very different from the production of spores upon the Fern frond, for no true leaf proper produces spores. Another peculiarity of the Fern frond is its mode of growth and development. If we open the leaf-bud, say, of a Horse Chestnut, we find within the outer protective husk the entire cluster of foliage beautifully packed, only waiting to be liberated to expand and grow to full size. In some bulbs we may note the same thing if we cut them through the centre. The Fern frond, on the other hand, develops entirely from the point or points, and commences as a tiny knob. This knob, as it lengthens its stalk and rises into the air, shows a growing tip, and this tip divides again and again, according to its eventual simple or decomposite form, forming a mass, coiled at first tightly inwards, crozier fashion. Then as the points become more and more developed and the stalk lengthens, the coil gradually loosens, and by this time we can probably see that the frond is there in detail. The apical or top growth continuing, we may see the originally tiny knob expand on the same continuous lines into a frond of many feet in length and width, and with thousands of fine divisions, according to the species or variety concerned. This kind of growth is termed circinate, and is, with very few exceptions, peculiar to all Ferns, not being, we believe, seen at all in flowering plants. The spore is sometimes looked upon as the equivalent of a seed, but it is only so by virtue of its forming the means of reproduction by wide dissemination, as do the seeds of flowering plants. In itself it is not a seed, but merely a detached germ, capable of producing what to all intents and purposes is a seed. It is a general rule in nature, though with some exceptions, that offspring cannot be produced without previous fertilisation of the primary germ. In flowers we know that this is done by various agencies—bees and other insects, and in many cases by the wind, these carrying the fertilising material from one plant to the other. In Ferns the same rule applies, and we therefore find that the spore, when it falls on to congenial soil and is not disturbed, does not, as would a fertilised seed, at once project a root and throw up leaves, but merely protrudes a tiny green cell, which multiplies itself and grows into a small green heart-shaped scale, about the size of a herring scale. This adheres by means of minute rootlets to the soil, and in time produces on its under surface what are practically male and female flowers, the latter carrying several embryo plants embedded in the scale at their base. Fertilisation then takes place through the medium of the dew-like moisture collected below the scale, and as a result we next see a young Fern, usually only one, but sometimes several, rising from the indentations of the heart-shaped scale, and a new generation is thus started. Toward the end of the last century the writer was fortunate enough to make the discovery that in some rare cases the Fern frond was capable of producing this heart-shaped scale direct, without the agency of the shed spore, and it was also found that it originated in some cases by extension of the growing tips of the sub-divisions. These phenomena were called respectively soral apospory and apical apospory, both involving a considerable shortening of the normal cycle of Fern life. Here, again, the Fern frond has proved itself to be fundamentally different from the leaf proper in some of its functions and capabilities. *Chas. T. Druery, V.M.H., F.L.S.*

CHIMONANTHUS FRAGRANS.

Few winter-flowering shrubs have received or deserved so much praise as Chimonanthus fragrans (Calycanthus praecox), the Japan Allspice. The species was first grown in England by Lord Coventry (see Curtis's *Botanical Maga-*

zine, tab. 466), who received it from China in 1766 and cultivated it at Croome with great success. Mr. William Dean, gardener to Lord Coventry, writes (loc. cit.) enthusiastically of the then recent acquisition. The original specimen, planted in a conservatory, had become in the course of 33 years 16 feet high and 10 feet wide, and continued to produce a succession of flowers from September to March. Mr. Dean adds that it produced seed most years at Croome, "but I believe at no other place in England." Even at the present day it is somewhat unusual for Chimonanthus fragrans to set seed in this country, but specimens are occasionally sent to this office. The description of the grandiflorus variety given in these pages (Feb. 13, 1892) may perhaps induce some who have not grown the plant to do so:—"What a glorious winter-flowering shrub; yet how few are in possession of it! It is one of the few subjects that produce their welcome flowers during the dreary winter months without the assistance of artificial heat." It may be added that though the individual flowers lack brilliancy, being pale yellow streaked with purple, the defect is amply atoned for by the luxuriance and persistency of flowering, as well as by the fragrance of the flowers. Under garden cultivation Chimonanthus fragrans makes a bush some 6 feet in height. Owing to its liability to be damaged by frost it is best to grow the plant against a wall with a warm aspect. Chimonanthus fragrans does well in a fairly rich loam, and requires to be pruned carefully after it has blossomed.

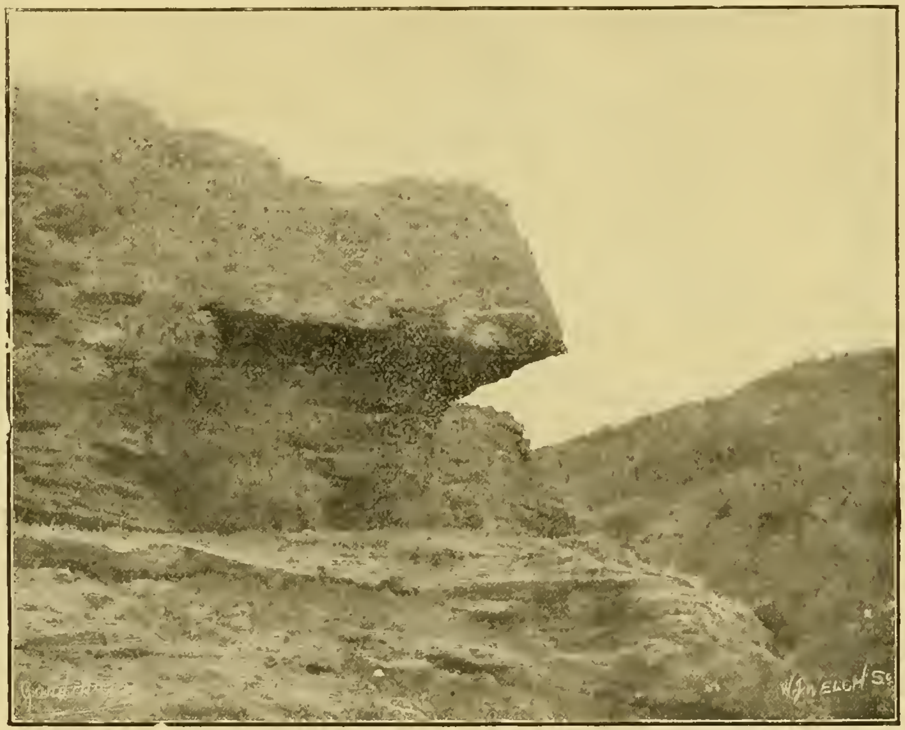


FIG. 88.—HOME OF PRIMULA PALINURI IN SOUTHERN ITALY.
(See p. 216.)

PUBLICATIONS RECEIVED.—*New Garden Plants of the Year 1913. Bulletin of Miscellaneous Information,* Royal Botanic Gardens, Kew. Appendix 3, 1914. (His Majesty's Stationery Office, London.) Price 2d.—*The Journal of the Royal Horticultural Society.* Edited by F. J. Chittenden, F.L.S., Vol. XL., Part I. August, 1914. (W. Wesley and Son, 28, Essex Street, London, W.C.) Price 5s.—*The Daffodil Year Book,* 1914. Published under the direction of the Royal Horticultural Society, Westminster, London. (W. Wesley and Son, 28, Essex Street, London, W.C.) Price 2s. 6d. net.

The Week's Work.

FRUITS UNDER GLASS.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

LIFTING TREES FOR REMOVAL.—It is desirable if possible to superintend personally the lifting of trees, especially if these have been in training for several years, otherwise the operation may be carelessly done by those who have this part of the business entrusted to them, the roots may be cut and mangled by the spade, or by pulling up the tree, before the roots have been sufficiently released from the soil. It is difficult to prevent this trouble when the trees are obtained from a distance, but a stringent rule of refusing to accept trees so damaged would probably prevent a recurrence. Let the trees be taken up with as many roots as possible, removing and loosening the soil for a good distance around the tree, as well as underneath, so that as few roots as practicable are broken or damaged whilst digging amongst them. Never allow either spade or fork to be thrust into the soil near the stem of the tree, as the main roots would be likely to be damaged. When a main root is accidentally split or otherwise damaged, and no means employed to remedy the injury sustained, the tree more often than not becomes unhealthy and diseased. Whenever such roots are damaged, and they cannot be very well spared, let the bruised or damaged part be pared clean with a sharp knife, and a styptic applied immediately afterwards. In the case of a split main root, well wash the injured part, afterwards binding tightly with strong, broad Raffia. The necessity of pruning and dressing damaged roots is more particularly urgent with the Peach, Nectarine and Cherry, for without proper treatment these gum at the roots, which defect, if not counteracted, very materially affects the upper part of the tree. Should a strong leading root be damaged near to a lateral one it should be cut off close to the latter, otherwise the part left would in all probability commence to decay, and injuriously affect the whole tree. The small, fibrous roots do not require so much exactness in pruning as the larger ones do, because they more readily produce new roots, but it is always necessary in pruning any root, whether large or small, to finish by a clean, smooth cut.

VINERY.—Young vines that were planted last spring require attention. The canes having furnished the available space, all superfluous lateral growths should be removed, and a brisk and somewhat dry atmosphere maintained until the shoots are thoroughly ripened. Pot vines intended for forcing early, being thoroughly ripened, should be partially rested by gradually reducing the supply of moisture at the roots, but not so as to cause the soil to become dust-dry or the principal foliage to flag. Grapes that have been ripe for some time should be examined frequently, and mouldy or defective berries removed. Circulate a little heat in the hot-water pipes on damp, dull days, and ventilate the house sufficiently to cause superfluous moisture to evaporate. Vines from which the bunches have been gathered should be kept clean by occasional syringings, and insect pests destroyed by fumigations or insecticides.

PLANTS UNDER GLASS.

By C. H. COOK, Gardener to the Earl of DERBY, Knowsley Hall, Lancashire.

MARGUERITE MRS. SANDER. — Cuttings should now be placed round the edges of 5-inch pots. Place them in a close frame and pot them off singly in a 3-inch pot as soon as rooted.

FITTONIA.—Fittonia argyroneura, with white-veined leaves, and F. Verschaffeltii, with red-veined leaves, are useful stove plants for edging or planting underneath stagings or shaded places. Insert strong cuttings into small pots, and place them in a propagating case, keeping them moist; they will be needed for conservatory decoration in spring.

RICHARDIA AFRICANA.—In a previous calendar I recommended re-potting plants that had remained in their pots throughout the summer, for these are expected to flower earliest. Those from the open will furnish a succession of bloom, and the plants should be lifted and potted at once. Retain all the roots, remove suckers, and place one crown in a six-inch pot, or three or four strong crowns in a nine-inch pot. Work the soil firmly about the roots and then soak it with water. Stand the plants on an ash bed, having the protection of a north wall, for another fortnight, then remove them to an airy house. As the pots become filled with roots let the temperature of the house be increased. When established feed the roots with half an ounce of Peruvian guano or Clay's fertiliser in one gallon of water.

CALCEOLARIA PROFUSA CLIBRANII.—Cuttings should be taken from old plants to furnish specimens that will flower in April and May. Select only shoots that show no tendency to flower for the present. Dibble them into well-drained boxes or pots filled with a sandy compost, and root them in a cold frame, which should be shaded until the cuttings are established, when they should be potted into three-inch pots. Keep the plants in a growing condition throughout the winter, and repot them as required. Aphis must be guarded against.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to Lady NORTHCOTE,

FRUIT PICKING AND STORING.—This important work should be supervised by a responsible person, otherwise it may be done in a careless or haphazard manner, resulting in badly bruised fruit being stored with sound specimens. It is an easy matter to gather ripe fruits in the best possible condition from bush trees, and the earlier fruits should be lifted upwards to see if they part from the stem readily, for the finest fruits usually ripen first. If these are allowed to drop and become bruised they cannot be expected to keep well. After the first fruits are picked, the remainder can be left a few days till they also part readily from the tree. This method is scarcely practicable in the case of large orchard trees, therefore it is doubly necessary to see that the fruits are really ripe before attempting to gather them for storing. A common error is made in picking late varieties of Apples and Pears much too soon. The longer late varieties remain on the trees, in reason, the better will they keep. The belief prevails that Apples or Pears must be picked before frost occurs, which is a mistake. A slight frost does no harm whatever, which is proved by the fact that the few fruits overlooked when picking may hang on the tree in good condition for several months. The following list includes some of the best late culinary Apples :—Bramley's Seedling, Bismarck, Annie Elizabeth, Newton Wonder, Royal Lake Cooking, Tower of Glamis, Dumelow's Seedling (Wellington), Sandringham, Mère de Ménage, Schoolmaster, Northern Spy, and Alfriston.

Dessert Apples.—The season seems to have been most suitable for Cox's Orange Pippin and Ribston Pippin ; both of these varieties, grown as bush trees in this garden, have cropped remarkably well. As these Apples are favoured varieties, every effort should be made to keep the fruits in good condition for the longest period possible, and to ensure this extra care should be taken in picking and storing them. Other excellent late dessert varieties are Adams' Pearmain, King of Tompkins County, Melon Apple, Allen's Everlasting, Lord Hindlip, Court-Pendû Plat, Brownlee's Russet, Cockle's Pippin, Ashmead's Kernel, Reinette du Canada, and Duke of Devonshire. Much of the shrivelling in late varieties of Apples in early spring may be traced to the fact that they were picked too early, or stored in too dry an atmosphere. A cool and rather damp store with sweet air is far better than a very dry room ; in fact, no fruits will keep long in good condition in the latter conditions. The greatest care should be taken to avoid bruising, and any fruits that are injured by birds or wasps, or are badly spotted, should be put aside for present consumption. The selected fruits can be stored in bulk for the present, and can be looked over and placed in a thinner layer a little later in the season, when the early varieties will be used, and more space available. This method and the use of fruit-storing trays will economise space in the fruit-room, which in many places this season can scarcely contain all the fruit. When this is the case there need be no hesitation in storing them in a cool shed or cuthouse, till room can be found for them in the fruit store. A few typical fruits of each variety placed on a bench or table in the fruit-room, properly labelled, and with the date of picking, will be educative and of great interest to visitors.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

The Wild Garden.—Here and there in the wild garden will be noticed certain beds or clumps of plants that require to be replanted owing to lack of vigour or to other circumstances. The work of replanting will be a simple matter if the advice given in previous calendars to maintain a well-stocked reserve garden has been followed. Do not plant the same kind of plant in the same place again, but endeavour to get something that is quite a change. Let the ground in each case be thoroughly well prepared, and place plenty of manure deep into the soil for the plants to feed upon for some time to come.

Amaryllis Belladonna.—Belladonna Lilies are now in their full beauty. Unfortunately the plants are not perfectly hardy, but they will succeed out-of-doors at the foot of a warm wall, for example, near to a plant stove or other greenhouse where they receive a little heat from the wall by radiation. The bulbs resent frequent disturbance, but if it is required to increase the stock or make fresh plantings they may be taken up as soon as the flowers are over and replanted at about 1 foot apart, according to the size of the bulbs. They grow best in a rich yet light, sandy soil free from animal manures. Stimulants are best supplied in the form of liquid manure, whilst the leaves and growth are active.

Bulbs in Grass.—The work of planting bulbs in grass land should be done forthwith, as early planting means a better root system, and in consequence longer flower stems and blooms of better quality, size and colour. This remark applies especially to all members of the Narcissus family, Tulips, Hyacinths, Erythroniums (Dog's-tooth Violets), Scilla (Grape Hyacinths), Crocuses, Chionodoxas, and blue-flowered Anemones. A large breadth of Crocuses in the grass in full flower on a sunny day in February is a most beautiful sight, especially where they have been grouped together in large blocks in real harmony of colours. Masses of giant Snowdrops planted in juxtaposition always give a charm to the garden in spring. Moreover there is the satisfaction of knowing that there is a permanency of pleasure in this natural form of gardening, and for a small initial cost.

Prospective Work.—Make sure of having a sufficient stock of each subject of tender summer bedding plant by propagating early, allowing a fair margin for losses in the winter months, as well as during the rooting period. Propagate only from healthy cuttings.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Deciduous Calanthes.—The favourite conditions out-of-doors during the summer and autumn have been very helpful to the species and hybrids belonging to this section of Calanthes. In many instances the pseudo-bulbs are already fully developed and the flower-scapes are in course of development. They are much earlier than usual, and remembering that Calanthes are most valuable when they bloom in December, it will be well to remove the most forward plants to cooler conditions, in order to retard the flowers as much as practicable. If there are no means for giving the plants these cooler conditions in another house, let them be placed together in a portion of the house they are now in, and endeavour by the careful use of the ventilators to do something in the way of retarding them where they are. Directly the plants commence to shed their leaves less water will be needed, but the plants must not be dried off until the flowers have passed. Light has a very marked effect on the quality and colour of the flowers. Where large pseudo-bulbs are produced, and these pseudo-bulbs do not ripen perfectly, the flowers are generally inferior. The plants should be well exposed to the light, and the roof ventilators may be used freely when the outdoor conditions are favourable. As the pseudo-bulbs show signs of maturing, so should the moisture in the atmosphere be gradually reduced, but the syringe must be used occasionally in order to destroy red spider, which is apt to be very troublesome when the atmosphere is kept dry.

Seedling Odontoglossums.—Many of the plants raised from seed sown last spring are developing their first, and some their second, leaf. These may be transplanted in single pots or pricked out several together in receptacles of a suitable size. It is not advisable to transplant seedling Odontoglossums when the weather is warm and dry, but now that the conditions are moister and more favourable generally the work may be done with safety. At this season the young plants will become established without any appreciable check. It is desirable also that they should be pricked off and become established before it is necessary to use the heating system to any great extent, but at the same time sufficient heat must be used to prevent the temperature falling below 55° at night, for a slightly higher temperature than this is best. We usually prepare the pots a few hours before they are required, to permit of the compost being watered and allowed to drain before the young plants are pricked out. A compost consisting of equal parts good fibrous peat, chopped Sphagnum-moss (which should previously be well washed and the heads picked off), Oak or Beech leaves, broken fine, but not dusty, is suitable. If the materials are sterilised first any insect pests and fungous germs that may be present will be destroyed. Add sufficient sand to render the materials porous. The pots should be filled to about half their depth with material for drainage. Make the compost moderately firm and trim the surface evenly. After the young plants have been placed in the compost moisten them with a fine sprayer, and afterwards place them in a moist position, within reasonable distance of the roof-glass. Shade them carefully from strong light. The maggot of a small black fly is the greatest pest of seedling Odontoglossums. After perforating the compost the creatures churn it up in such a manner as to undermine the young plants in their early stages, and later feed on them. There appears to be no remedy for the maggot, but regular vaporisings will destroy the fly on the wing. The pest is always troublesome in fine, bright seasons ; even the old compost of the seed bed is not proof from their attacks.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Brassicas.—Scotch Kale, Sprouting Broccoli, Cabbages and any other kind of greens likely to prove useful should be planted as soon as convenient in vacant land not likely to be wanted until late in spring or early summer. None will make much growth and accordingly the plants should be set much closer than those put out earlier in the year. Cabbages that have been cropping continuously since the spring should be destroyed. Now that plenty of Savoys and Brussels Sprouts are available the ground vacated should be trenched deeply forthwith, and manured either at once or in the spring, according to convenience.

Late Peas.—The pods are swelling freely, and it will be beneficial to trim the tops of the plants with a pair of shears or to switch them off with a hook. Owing to the long period of drought the plants are very dwarf and quite healthy, though there is always a danger of mildew attacking the haulm. Gishurst Compound is an old but effectual remedy for mildew ; the lime-sulphur specific is a modern equivalent of easy application. Either is to be preferred to flowers of sulphur or liver of sulphur. If the ground is dry, water it sufficiently to wet the soil to a depth of 2 feet or more. This will help to check mildew and thrips, but it must be remembered that in late districts watering renders the foliage tender.

Carrots.—Matured roots may be lifted and stored, and as they do not bleed when fractured or cut there need not be the same care exercised in lifting as is essential with Beetroot. Similarly, instead of the leaves being twisted they should be cut off close to the flesh to destroy the growing point, which might start into growth next spring. Fresh sand is a perfect medium for preserving the roots, but it must be dry, for the roots will be induced, should it be at all damp, to produce fibres. In this district, where large quantities of Carrots are grown in fields, the roots are clamped in much the same way as are Potatos, the main thing being to keep the roots fresh, and yet in such a condition that they will not start into growth.

THE APIARY.

By Chloris.

Cleanliness and Disease.—Most apiarists have a spring cleaning, but this year let me implore all readers to perform the task again during the autumn. If possible, scrub all floor boards with a disinfectant, allowing them plenty of time in the fresh air and sunshine before returning them to the hive. Then the quilts, no doubt, have seen years of service ; if they are not replaced by new ones, disinfect them also. The quilts may be sprayed with a solution of Calvert's No. 5 carbolic acid, using one ounce of acid in twelve ounces of water ; but for washing the floor boards utilise boiling water and carbolic soap or a solution of Lever's Y.Z., as directed on the packet for fever patients, and to make doubly certain paint all the inside woodwork with a solution of No. 5 carbolic acid, one part of acid in two of water. Other disinfectants may be used if desired, with equally good results, e.g., Izal, eucalyptus, naphthaline, or camphor. In each hive on the floor board on the opposite side to the entrance, place two split naphthaline balls (halves) and the heat of the colonies will cause them to evaporate. It is well to remember that not only does filth militate against health, but ventilation without draught is necessary and also wholesome food, so that the highest standard of vitality may be maintained to enable the bees to resist disease.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 54.3°.

Actual Temperatures :—

London, *Wednesday*, September 23 : Max., 65° ; Min., 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, September 17 (10 a.m.) : Bar 29.5 ; Temp. 60°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY and FRIDAY—

Dutch Bulbs. By Protheroe and Morris, at 67 and 68, Cheapside, London, at 11.

MONDAY and WEDNESDAY—

Dutch Bulbs, Lilies, Palms, etc. At Stevens' Rooms, King Street, Covent Garden, W.C., at 12.30.

WEDNESDAY—

Japanese Liliums, Palms and Dutch Bulbs. By Protheroe and Morris, at 3.

Belgium's Contributions to Pomology.

At the present time, when the sufferings of Belgium are attracting the sympathy of the civilised world, it is impossible for horticulturists to forget the debt they owe to that country. The gardens of the whole world have profited much from the natural aptitude of the Belgians for horticulture, and their sustained interest in pomology. The names of towns and villages, now, alas! of unhappy fame, cannot be read by gardeners without calling up memories of this or that fruit with which they are associated. It is, therefore, of interest to recount some of the main facts of Belgian pomological history, in order that we may realise how much is due to this small country for the fruits that have so greatly enriched the gardens of the world.

It may be presumed that the fertile soil of the country has for many hundreds of years been favourable to the culture of fruits, as it is mentioned by Roman authors as a land famous for its Apples. Before the eighteenth century France was the unchallenged leader in the production of new fruits, but the varieties which were introduced were doubtless all chance seedlings, as the methods of cross-fertilisation were then unknown. In the early part of that century the sexuality of plants was beginning to be widely known and taught at the universities, and it is almost certain that this knowledge was first utilised as a practical means of producing new fruits in Belgium by Nicholas Hardenpont. This remarkable man was born at Mons in 1755, and received his education at the University of Louvain. After taking his degree he returned to his native town and commenced the experiments which caused him to be regarded as the Father of Pomology in Belgium. At this time the Pears which were generally grown were mostly of the crisp-fleshed variety, and it is thought, with some reason, that Hardenpont sought to increase the number of those with fondant or melting flesh. Be this as it may, his results are certainly such as to confirm this opinion. His most famous seedlings are Beurré d'Hardenpont, and Beurré Rance. The former is now known in England as Glou Morceau, a name which it received about 1800, and which signifies "dainty morsel." It is to be regretted that this valuable Pear, now so widely known, should not retain its original name and thus keep alive the memory of its raiser. Beurré Rance is still widely grown in this country, and the name has been the subject of several stories. One of these describes a visit of some enthusiasts to the Abbé Hardenpont, who asked them to try the new Pear. One of those present said it had a rancid flavour. "Rancid!" said the indignant raiser, "I will call it Beurré Rance to perpetuate and shame your bad judgment." This story, probably *ben trovato*, is put aside by more serious writers in favour of a derivation from the Flemish "rens," or "reinsch," signifying bitter, a flavour which under bad conditions this fruit occasionally develops. Passe Colmar, an excellent December fruit when grown on a warm soil, is another of the famous Abbé's seedlings, and it is still grown in this country. The other fruits of Hardenpont are less known in this country. Délices d'Hardenpont, Fondant de Panisel, and a few others have now lost their former popularity.

Owing to the fact that Hardenpont was not much in touch with horticultural circles, it was some time before his fruits were widely distributed, but in 1806 Noisette visited Belgium, and there saw and at once appreciated these striking novelties, and through him they were soon distributed over Europe. The interest aroused by these new fruits naturally encouraged imitators, and Pears seem especially to have been the fruit which attracted their attention. In 1787 M. Capiaumont, a chemist at Mons, raised from a seed of the Calebasse Pear the variety which still bears his name. For a while it masqueraded under the name of Beurré Aurore, and by this it is described and figured in *Le Jardin Fruitier* of Decaisne. The fertility and hardiness of this fruit have led to its cultivation in many countries.

The greatest figure in Belgian pomology is undoubtedly that of J. B. Van Mons. His extraordinary labours and unfailing perseverance resulted in the production of an enormous number of new fruits, which probably no raiser has ever equalled. His life and work were treated at some length in a recent number of this journal,* and it will therefore be unnecessary to write of them in any detail. Van Mons' influence in stimulating others cannot be over-emphasised. The very fact that he set out to prove a new theory gave zest to the endeavours of his followers, and though his hypothesis is now seen to be baseless, its promulgation was of great value to Belgian pomology. His experimental garden suffered severely at the hands of the French army in its march on Antwerp, but his courage in removing what could be saved from the ruin and starting again elsewhere are worthy of the highest praise. After his death the mantle of Van Mons fell upon Alexander J. D. Bivort, a pomologist whose name will be remembered by his splendid *Album de Pomologie*, which contains coloured figures and descriptions of the best of Van Mons' seedlings. Bivort had long been on terms of friendship with Van Mons, and he purchased all the seedlings then at Louvain and removed them to his garden at Geest St. Remy, near Jodoigne. Here the work of describing and figuring them was carried on for many years, and the results published in the *Album de Pomologie* above referred to, and in the larger *Annales de Pomologie Belge et Etrangère*. Bivort claims attention chiefly as a systematic pomologist, and as such was a necessary complement to Van Mons.

In 1853 Bivort was obliged to leave St. Remy, and a new society, called the Société Van Mons, was formed under Government auspices to continue the work. Bivort was chosen as director, and a journal was published. However, after a few years, the State subvention ceased and the establishment was given up, and thus the original trees of Van Mons perished. The work of Bivort in preserving and recording these seedlings was of the highest importance, and assures him a high place in the pomological hierarchy.

Prominent among Belgian fruit raisers must be reckoned Major Esperen, one of Napoleon's officers. This gallant soldier saw much service before settling down to the peaceful occupation of fruit culture. Joining the army as a volunteer in 1803, he was wounded at Wagram, and promoted Lieutenant on the battlefield. Afterwards he took part in the campaigns in Germany, Russia, and Tuscany, retired in 1817, and devoted his time to the raising of seedlings, some of which are still in the first rank. The best known varieties of Major Esperen's raising is Josephine de Malines, which was produced in 1830, and named after his wife, Josephine Baur. Scarcely less well known is Emile d'Heyst, which first fruited in 1847, and was dedicated to Emile Berckmans, son of the well-known pomologist of Heyst-op-den-Berg. Another

---

* No. 1,381, June 14, 1913.

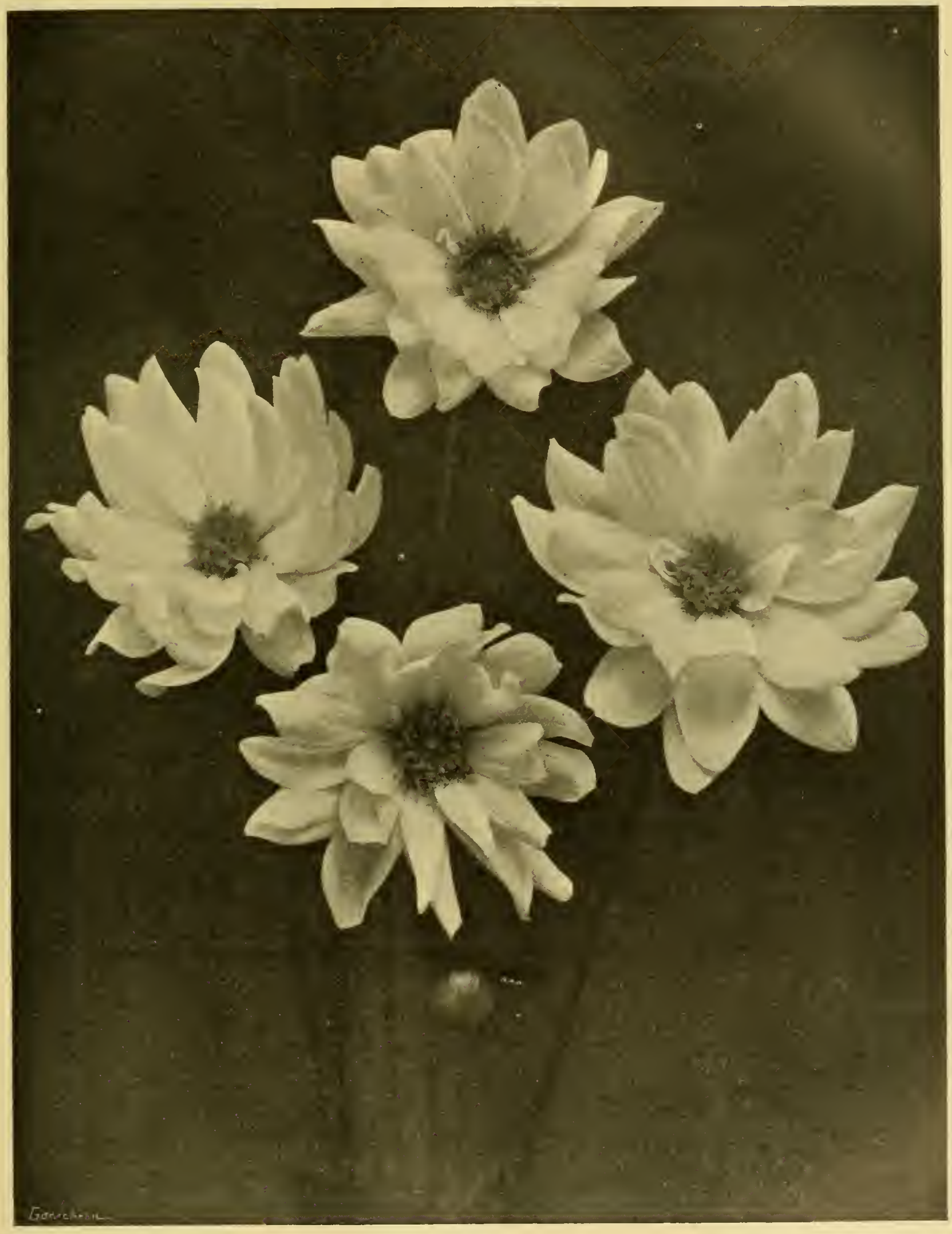
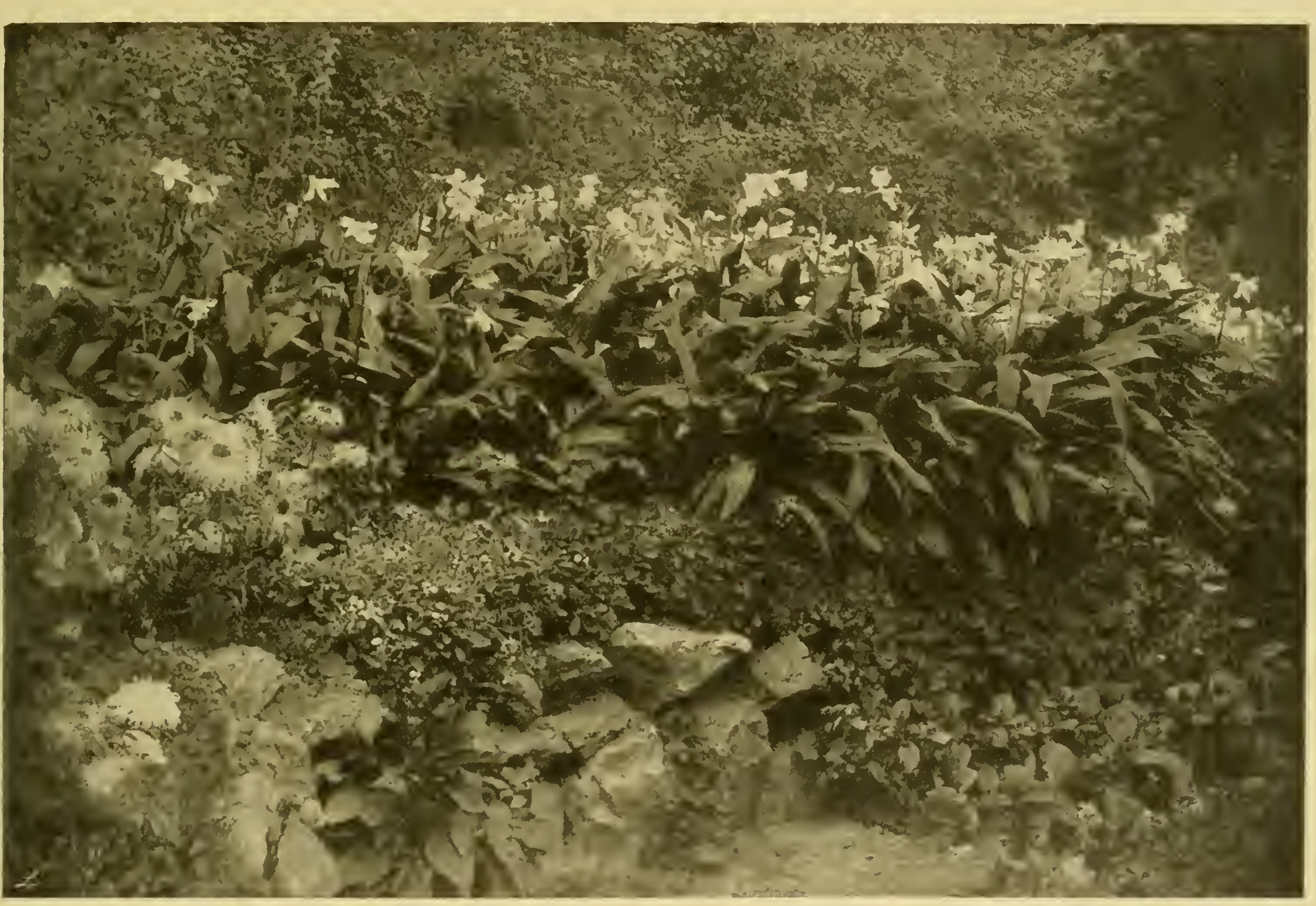


FIG. 89.—DAHLIA WHITE STAR.

This variety was awarded the First-class Certificate of the National Dahlia Society and the R.H.S. Award of Merit on September 8, 1914.
(See pp. 196, 225.)

Pear, Elisa d'Heyst, named in honour of Madame Berckmans, has not been so widely grown. Esperen's name is happily kept in memory by the well-known Bergamotte Esperen, which first fruited in 1830, and rapidly became known as one of the very best of its season. Another Pear, Soldat Laboureur, whose name bears reference to the career of its raiser, has never been much grown in this country, but it may still be found in many gardens in Holland and Belgium. The well-known Plum Reine Claude de Bavay was another of his seedlings, and was dedicated to Madame de Bavay, wife of the director of the Royal Gardens at Vilvorde. Esperen was the raiser of many other seedling fruits, some of which may still be found in Continental gardens, and his stringent selections made them all of very considerable merit. To have introduced three such valuable fruits as Josephine de Malines, Bergamotte Esperen, and Emile d'Heyst is no inconsiderable achievement.



[Photograph by W. Vasey.

Fig. 90.—Crinum Moorei album flowering in the Terrace Gardens, Torquay (see last issue, p. 199).

Another raiser of fruits who had considerable success was Xavier Grégoire-Nelis, of Jodoigne. His seedlings were extremely numerous, but few of them have found acceptance in this country. The best known are Zéphirin Grégoire, one of the most delicious winter fruits, and Nouvelle Fulvie, which was raised in 1854. The somewhat curious name of this fruit is accounted for in the following manner. In 1845 M. Grégoire raised a variety called Fulvie Grégoire. When, however, in 1854, Nouvelle Fulvie appeared, its qualities were such an improvement that it thus received its name as a supplanter of Fulvie Grégoire.

While the above-mentioned horticulturists stand out as leaders in Belgian pomology, the raisers of Pears may be numbered by scores, and it is impossible to deal with them exhaustively. Some of these have only one fruit to their credit, but in the case of M. Durondeau, a brewer of Tongres, Hainault, and M. Capiaumont, who was mentioned above, there is no danger of their names being forgotten.

Of the many other famous Pears which we owe to the Belgian raisers space will not permit a detailed list, but the following cannot be omitted. From the garden of the Capucine monks at Mons comes our earliest summer Pear, Doyenne d'Eté, while from the same town came the famous Marie Louise, which was raised by the Abbé Duquesne in 1813.

Of the many chance seedlings of which the origin is unknown, the most famous are Beurré Diel and Calabasse Bosc. The former was found by Meuris, the well-known gardener to Van Mons, at a farm near to Vilvorde, and the tree was still existing fifty years ago. Scarcely less famous is Calabasse, a discovery of Van Mons in the garden at Linkebeek.

It must not, however, be thought that Pears alone occupied the attention of Belgian pomologists, though they did so to a very large extent. Other fruits recall by their names many Belgian towns, such as the well-known Plum Belle de Louvain, the Cherry Abbesse des Oignies, Cérise de Gembloux, and many others.

But enough has been said to show the important place Belgium has filled in the history of pomology, and we may be sure that when the present war is over and the Belgium cultivators are once more able to devote themselves to their peaceful occupations, the memory of their famous pomologists will serve to inspire them with renewed zeal for a profession which they have always practised with such conspicuous success.

R.H.S. Fruit Show Abandoned.—The Council regret to be obliged to abandon the Fruit Show and Conference of Affiliated Societies fixed for September 29 and 30, on account of the Society's hall having been commandeered for military purposes, and the impossibility of finding any other suitable building which is not similarly liable to sudden occupation by recruits. *W. Wilks, Secretary, Royal Horticultural Society.*

Appointment from Kew.—Mr. Humphrey Gilbert Carter, M.B., Ch.B. (Edin.), has been appointed by the Secretary of State for India in Council, on the recommendation of Kew, Economic Botanist to the Botanical Survey of India.

War Items.—It is understood that the King has given instructions that planting is to be undertaken at Sandringham on a scale that will afford a considerable amount of employment. His Majesty has also given permission for an area on the Sandringham Estate to be placed at the disposal of the Cambridge University School of Forestry, in order that it may be used for purposes of experiment and demonstration.

—— It has been decided to hold the annual exhibition of the Nottingham Chrysanthemum Society's Exhibition as usual, and to hand the profit to the local branch of the National Relief Fund. The show is fixed for November 12, 13, 14.

—— About forty Kew men have volunteered for active or home service with the Army, and more are applying for leave. The number already gone includes sub-foremen, gardener students, constables, and labourers. Mr. C. P. Raffill, one of the principal sub-foremen, has joined the 11th Battalion of the Royal Fusiliers, at present stationed at Reed Hall Camp, Colchester.

—— Lady Catherine Milnes Gaskell, of Wenlock Abbey, Much Wenlock, Shropshire, has started a fund from the profits made of her alpine plants for buying comforts for sick and wounded soldiers and sailors. As Lady Catherine has arranged for three auxiliary hospitals, many comforts will be needed.

—— Provost Allen, Selkirk, having made an appeal on behalf of the Belgian Relief Fund, the *Southern Reporter*, a local newspaper, organised a successful exhibition and sale of flowers, vegetables, pot plants, and fruit in aid of the fund. Contributions were freely sent in, and a great display of produce made. A sum of £110 was realised.

—— Milton Park, the residence of Baron de Worms, has sent six servants for active service—two gardeners, two footmen, one chauffeur, and one groom. The head gardener, Mr. Wm. Gentles, who saw active service in South Africa, being a member of the National Reserve, is also liable to be called upon at any time.

—— The members of the Berwickshire Horticultural Society held a show and sale of flowers, vegetables, and fruit recently in the Town Hall, Duns, in aid of the Belgian Relief Fund. A liberal response to the request for flowers, etc., was made by all classes, and some very fine produce was shown. As the result, the sum of £100 was sent to the fund.

—— Mr. Alan L. Ramsay, eldest son of Danl. L. Ramsay, J.P., of the Royal Nurseries, Ballsbridge, Co. Dublin, has been gazetted Lieutenant in the 3rd Royal Irish Regiment.

—— I was extremely interested to read Mr. B. S. Faudel-Phillips' letter published by you under the heading "War Items." The scheme as it stands is not, in my opinion, a good one. The main point is, of course, to ensure a proper supply of flowers, etc., to the hospitals, but the appeal, as issued, will not necessarily result in a regular supply, but in one which, being incapable of being controlled, may result in the hospitals being alternately over and under supplied, and, apart from waste, fail to give the satisfaction it should yield. Another aspect I should like to point out is that the nurseryman is not necessarily making his fortune out of the war; but, like other mortals, he is probably making efforts to carry on his business. He should, therefore, not be asked, and certainly not be allowed, to undertake this task without others, more or less dependent upon his industry, being given an opportunity of co-operating. There are many besides the nurseryman, and many employees besides his, who are dependent upon horticulture for a living, and who would, I am sure, gladly contribute. The advantage to the hospitals in enlarging the number of contributors is obvious, but there are means of putting the supply of their own necessities under their own control, at the same time lessening the risk of hardship in the horticultural trade, and that is by buying the nurseryman's produce. Others besides myself have perhaps thought more or less clearly along these lines, and I take the opportunity presented by Mr. Faudel-Phillips in his practical appeal to suggest that it be made the beginning of a more comprehensive scheme involving monetary subscriptions and the purchase of produce. *Alf. Spring, jun.*

—— A gratifying response was made to an appeal on behalf of the National Relief Fund at Chesterfield last Saturday. Messrs. R. and W. Proctor, nurserymen, presented about 3,000 Roses, which were sold in the streets by ladies and boy scouts, with the result that the sum of nearly £45 was realised.

—— Mr. George B. Mallett, writing from the Bristol Battalion, Gloucestershire Regiment, states that the Cheddar nursery business is suspended for the period of the war and a short time afterwards. "All the eligibles of my nursery and contracting staff are with me in the Army for the period of the war, old men alone being left at home to keep things alive till our return from active service abroad."

—— The German food supply is estimated to suffice for the needs of the population for $1\frac{3}{4}$ year.

German Seeds.—The well-informed writer of the Seed Trade Report in *The Florists' Exchange* (September 5, 1914) is of opinion that orders for flower and vegetable seeds from Erfurt and other German seed-growing centres are likely to be filled. The crops are all being harvested—chiefly by boy scouts.

Belgian Exports.—At present there is considerable uncertainty in America as to the supply of Belgian horticultural produce, such as Azaleas, Palms, and tuberous-rooted Begonias, though there is some possibility of the produce being shipped by way of Rotterdam to London. Freights to America for Dutch bulbs, etc., are about 50 per cent. above normal. Lilium candidum from France is being shipped as usual.

French Crops.—According to a statement by Mr. Kelsey, the New York nurseryman, the French Government is appropriating for its own use 50 per cent. of the present year's crops; 25 per cent. are for the use of the Commune; and 25 per cent. for that of the owner.

National Sweet Pea Society's Trials.—The National Sweet Pea Society has decided to hold trials of novelties as usual next year. Those who wish to send seeds for trial should send 30 of each variety to the secretary, Mr. H. D. Tigwell, Greenford, Middlesex, to reach him not later than October 10. A fee of 2s. 6d. must accompany each variety sent for trial. The seeds should be sent in a plain sealed packet, and this packet enclosed in another larger envelope. This outer packet must bear the raiser's name, the name or number of the variety, and its colour description.

Moles as Pest-Destroyers.—The August number of the *Journal* of the Board of Agriculture contains a short article on the results of observations on the food of the mole. From these observations it would seem that the mole is a better friend to the farmer than has been generally supposed, and that he deserves a better fate than has hitherto been meted out to him. The investigation was carried out in the Zoological Department of the University College of North Wales at the suggestion of Professor R. G. White, and although it only extended over two months (December 5, 1913, to February 5, 1914) it goes far to prove the economic importance of the mole, both as a destroyer of insect pests, and also as an agent in aërating the ground. The method adopted by the investigators was to examine the contents of the stomachs of a large number of moles. 92 per cent. contained earth worms, 87 per cent. "leather jackets," 50 per cent. centipedes, and 41 per cent. wireworms. Minute grubs, cocoons, ants, and tiny beetles were also found in considerable quantities, and the investigators are of opinion that where vegetable matter was discovered it had only been taken in accidentally with the animal food.

Soya Bean as a Vegetable.—Many uses have lately been found for the Soya Bean, and it appears that its resources have not yet been exhausted. The young seedling plant, when about two inches high, makes an appetising salad plant; it should be blanched with boiling water for a few minutes, then washed in cold water, and dried on a clean cloth. It can also be cooked like asparagus, and served with melted butter. The new vegetable is already being sold in the Paris markets, where it realises 25 to 35 centimes (about 3d.) a lb.

Mr. Gerald W. Butcher.—We understand that Mr. Gerald W. Butcher has retired from the post of sub-editor of the *Journal of Horticulture*, a position which he held for nearly two-and-a-half years.

King's Oak, Tilford.—We are glad to learn that steps are being taken to preserve from complete decay the celebrated Oak at Tilford, long known as the "King's Oak." The tree, the age of which is variously estimated at from 300 to 1,000 years, had become seriously decayed, and was in danger of falling. The advice of a Kew official was asked, and, in accordance with his counsels, the decayed matter inside the trunk is being removed, and the cavity filled with masonry.

Removal of Albumen from Seeds.—The *Pharmaceutical Journal* refers to experiments made by Monsieur J. A. Urbain showing that the presence of albumen in the seed has a markedly favourable influence on the growth of the plant. Continued experiments prove that its presence is not absolutely necessary for plant life subsequent to germination. After removing the albumen, during the first days of germination, from the seeds of Castor Oil, Nigella, Poppy, Maize, Fennel, Oats, and many other species, it was found that perfect dwarf plants could be obtained in all instances. The size and rate of development was, however, in all cases, markedly less than in the controls, grown side by side, from normal seeds. The shape of the leaves was also modified in the plants produced by the seeds from which the albumen had been removed. Sometimes a scanty precocious inflorescence occurred in these, followed by a second normal flowering. Also in the precocious abnormal flowering sexual anomalies were often observed. It is evident, therefore, that the presence of albumen has an important influence on the development of the plant.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

London Kitchen Gardens.—At this critical time for the national food supply, it is proposed to invite the co-operation of the various horticultural societies of London in developing the kitchen gardens and allotments of their members, and to present through their secretaries vegetable seedlings and seeds, as well as garden accessories, such as small frames, hand-lights, fertilisers, etc. It would also be advisable for us to provide local district demonstrators to instruct those who have never grown vegetables before. We propose that those secretaries of local gardening societies who are in favour of this movement of London Kitchen Gardens should form from their members an advisory committee of eight members (each representing a postal district) to assist the central committee of London Kitchen Gardens and act in conjunction with them, this committee to elect their own chairman and officials. A general meeting of the local secretaries who thus become members of London Kitchen Gardens will be held early next month. We earnestly appeal to the secretaries of the gardening societies of London to take this opportunity to rally their forces and become the pioneers of this new movement for the support and advancement of horticulture in London. *(Mrs.) H. Fitzstephen O'Sullivan, Secretary, 32, Victoria Street, London.*

Psoralea bituminosa.—Why do not more grow this beautiful herb, which Canon Ellacombe and I came across growing upon the hills behind Genoa? I enclose the last blooms, which will give you an idea of the brilliancy of the purple colouring. The plant grows here some 4 feet high, and is in flower for several months. Whether it would stand a severe winter I have no means of knowing, for I have only grown it for some six years, none of which has been exceptionally cold; but at all events in the warmer districts it ought to be perfectly hardy. The name ψωραλέος (itchy, scabby, warty) is given the genus because as a rule the plant is sprinkled all over with glandular dots or wart-like points, but in this species this characteristic is not very pronounced. The specific name bituminosa should indicate that it has the smell of bitumen, but I cannot, and do not wish to, detect it. The leaves are compound, and consist of three leaflets. The stipules adhere to the stalks. *A. C. Bartholomew, Park House, Reading.*

Paeonia lutea.—This plant, as usually seen in gardens, does not show its full beauty because the flowers are concealed by the foliage. A variety figured in *Gardeners' Chronicle*, July 18, 1908, as a Supplementary Plate under the name of P. lutea superba, which was a seedling selected by Lemoine of Nancy and sent by the late Mr. Gumbleton, may be the same as mine, which has grown into a bushy plant 4 feet high. It has the peculiar habit of flowering a second time on long stalks which are thrown up well above the foliage, and the plants are now in full beauty, though the seeds on the early flower stems are nearly ripe. The older stems of this variety become as woody as those of P. Moutan, and as P. lutea is proof against the severe spring frosts which usually destroy the beauty of the Chinese and Japanese Tree Paeonies, and as, moreover, its seedlings are much more vigorous and more easy to grow than those of P. Moutan, I think that they may prove an excellent stock on which to graft the latter. Can anyone tell me whether this has been tried, and whether the second flowering of P. lutea has been generally noticed or not? Also I should like to know whether there are two forms of Paeonia Mlokosewitschii figured in *Gardeners' Chronicle*, July 25, 1908, and also in *Botanical Magazine*, tab. 8173. Mr. Watson describes this as the handsomest of the yellow-flowered Paeonies, but my plant, which I owe to Mr. Groves' kindness, is not so large nor so beautiful as Paeonia Wittmanniana or Paeonia lutea. There is another yellow-flowered Paeony, from the Caucasus, P. macrophylla, which, so far as I know, is not in cultivation. If anyone has it I should be glad to get it. *H. J. Elwes, Colesborne.*

Late Peas (see p. 202).—It has been usual for us to gather late Peas up to the beginning of November. This year we sowed as usual Gladstone and Late Queen, but both have failed. The last pods we gathered were on August 29, from Gladstone. Late Queen failed entirely. *William Currell, East Cliff Lodge Gardens, Ramsgate.*

Apple Rev. W. Wilks.—On the 17th inst. I picked from a small tree in my nurseries a fruit of the new culinary Apple, Rev. W. Wilks, weighing 34½ ozs., 17¾in. in circumference, and 5⅛in. in height. The previous heaviest Apple was a fruit of Gloria Mundi, grown at Hereford. and weighing 32 ozs. I have another fruit of the same variety (Rev. W. Wilks), weighing 27½ ozs., and twelve, which together weigh 13 lbs. 10 ozs. *George Pyne, Topsham, Devon.*

[At the Ledbury Show in 1888 a fruit of Warner's King was exhibited weighing 32 ozs.—Eds.]

SOCIETIES.

ROYAL HORTICULTURAL.

September 22.—The meeting fixed for Tuesday last was held in the Central Hall, Westminster, the site of the old Aquarium, the Society's own hall having been requisitioned by the War Office. The Central Hall was not a very suitable place for a flower show, but was the best the Council could obtain in the circumstances. It consists of a spacious underground apartment, lighted by electricity (which, by the way, made it impossible to judge the colours of the flowers correctly), with side rooms, and an annexe where the committees held their sessions. Besides the ordinary fortnightly exhibition, the annual competitive vegetable show was held.

All kinds of garden produce were well represented. In the floral section Dahlias formed the chief feature. In consequence of the National Dahlia Society's Show having been abandoned growers took the opportunity of exhibiting on this occasion the specimens which would have figured at that show. The Floral Committee granted to new Dahlias six Awards of Merit.

The Fruit and Vegetable Committee awarded a Gold Medal to a collection of Apples and Pears shown by Mr. J. C. Allgrove, of Langley, Buckinghamshire. There were several other good exhibits in this section, and many seedling Apples were submitted for award but although two were considered meritorious none received an award.

The Orchid Committee made only one award to a novelty but several collections received medals.

Floral Committee.

Present:—H. B. May, Esq. (in the chair), Messrs. C. T. Druery,, John Green, G. Reuthe, Arthur Turner, J. W. Moorman, W. H. Morter, John Jennings, Wm. Howe, W. P. Thomson, John Dickson, H. J. Jones, Chas. Dixon, W. Bain, Chas. E. Pearson, E. H. Jenkins, Geo. Paul, J. F. McLeod, and F. W. Harvey.

AWARDS OF MERIT.

Heliotropium Mrs. J. W. Lowther.—A dark-coloured variety of compact habit, suitable either for bedding or pot-culture; one of the plants carried an inflorescence more than 9 inches across. Shown by Messrs. W. Cutbush and Son.

Aster Amellus Arethusa.—A beautiful mauve-tinted flower; rather taller, and slightly more lax than the type. Shown by Messrs. T. S. Ware, Ltd.

A. vimineus Lovely.—This variety has soft, mauve-pink flowers, a distinct advance in the shades of the small-flowered section. Shown by Messrs. H. J. Jones, Ltd.

Salvia Greggii.—A North Mexican species forming a small, slender shrub about 3 feet high. The leaves are 1 to 1½ inch long, dark-green above, and slightly paler beneath. The inflorescence forms a raceme of carmine flowers, the latter with the usual broad lip. The species makes a good greenhouse flowering plant for the autumn, and it will probably prove hardy in favoured localities, as it grows wild at an elevation of 10,000 feet. Shown by Mr. Amos Perry.

Pileostegia viburnoides.—A monotypic genus, a member of the N. O. Saxifrageae. The plant bears some resemblance to Skimmia japonica, and has an inflorescence like an Aralia. The leaves are coriaceous, about 2½ inches long, acuminate, and entire. The tiny, globular, white flowers bear each a little cap, hence the generic name. This is pushed off by the growing stamens, which are the most conspicuous part of the flower. The plant is hardy, and is promising from the gardener's point of view, as it blooms when most other shrubs are over. The specimen exhibited by the Hon. Vicary Gibbs was introduced from China by Mr. E. H. Wilson.

The following varieties of Dahlia received Awards:—Lord Kitchener (Cactus), orange-scarlet, shown by Mr. H. Shoesmith; Neptune (Cactus), pink, marked and lined with deeper crimson; W. E. Peters (Cactus), crimson, approaching scarlet at the base of the florets; Melody (Cactus), sulphur-yellow, tipped with white, the last three shown by Messrs. Stredwick and Son; Lowfield Star, a pink form of White Star (see fig. 89), shown by Messrs. J. Cheal and Sons; and Barbara Purvis (Pompon), White, shown by Messrs. Keynes, Williams and Co.

GENERAL EXHIBITS.

Mr. L. R. Russell, Richmond, exhibited a collection of stove plants, of such kinds as Dioscorea illustris, Ficus Parcellii, Maranta regalis, Acalypha hispida, and Dracaena Sanderiana. (Silver-gilt Floral Medal.)

Messrs. J. Cheal and Sons, Crawley, showed flowering and ornamental-leaved trees and shrubs, together with a large exhibit of Dahlias. Varieties of Ceanothus, Baccharis halimifolia, a very showy shrub for autumn effect, with trusses of white pappus; Acer tataricum (Ginnale), Buddleia variabilis amplissima, a deep pink form, with dense, upright spike; the Darmouth and Transcendens crabs, both very ornamental in fruit, and Tamarix hispida aestivalis, were all noteworthy. The Dahlias included the beautiful White Star variety, see fig. 89, which was awarded the First-class Certificate of the National Dahlia Society and the R.H.S. Award of Merit on September 8, 1914. The variety is recommended for garden decoration, and is especially valuable for furnishing cut blooms, as the stems are stiff and long. The blooms, which are pure white, with a golden centre, have two rows of florets, and have been likened to a Water Lily. (Silver Flora Medal.)

Messrs. Stuart Low and Co., Bush Hill, Enfield, exhibited Chironia baccifera, Nerines and Statice imbricata.

Messrs. H. B. May and Sons, Edmonton, were awarded a Silver Banksian Medal for Ferns, Veronicas, Bouvardias, and Begonias.

Mr. C. Engelmann, Saffron Walden, showed Carola, Scarlet Carola, and Gorgeous especially well in a collection of Perpetual-flowering Carnations. (Silver Banksian Medal.)

Messrs. B. R. Cant and Sons, Colchester, exhibited Roses, the varieties Rayon d'Or, Jessie. Orleans Rose, Juliet, and Ellen Poulsen being remarkably good. (Silver Flora Medal.)

Roses were also exhibited by Messrs. W. and J. Brown, Peterborough, and the award of a Silver Banksian Medal was made.

Mr. J. B. Riding, Chingford, Essex, showed Dahlias, mainly Collerette and Paeony-flowered varieties. This collection was the finest in the show and was rich in novelties. Notable Collerette sorts were C. P. Charlosse, Ideal, Nero, and Star of Montplaisir, whilst the best of the Paeony-flowered varieties were Corrie, Loveliness, Mozart, Mme. Charon and Boeldian. (Silver-gilt Flora Medal.)

Dahlias were also exhibited by Messrs. James Carter and Co., Raynes Park (Silver Banksian Medal); Messrs. Carter, Page and Co., London Wall (Silver-gilt Banksian Medal); Mr. J. T. West, Tower Hill, Brentwood (Silver Banksian Medal; and Messrs. T. S. Ware, Ltd., Feltham. (Silver Banksian Medal.)

Messrs. W. Wells, Ltd., Merstham, exhibited Antirrhinum Nelrose, including tiny plants flowering in small pots, and the Scarlet Carnation Champion.

Messrs. H. J. Jones, Ltd., Hither Green, Lewisham, filled a large table with border Asters (Michaelmas Daisies). Notable varieties were Mrs. Frank Penn, Lil Fardell, the large-flowered and best of the Novae-Angliae section, Lady Shackleton, mauve; Mrs. Heneage, corn-flower blue; and Mrs. H. Morris, clear pink. (Silver Banksian Medal.)

Mr. Ernest Ballard, Colwall, Herefordshire, also showed border Asters of such notable varieties as Nancy Ballard, Jupiter, Mira, Opal, and Corona. (Silver Flora Medal.)

Mr. G. Reuthe, Keston, Kent, was awarded a Bronze Banksian Medal for Alpines and choice shrubs. The exhibit included a flowering plant of the rare Saxifraga mandschurica; the inflorescence resembles a lax truss of Petasites fragrans.

Mr. Amos Perry, Enfield, was awarded a Silver Banksian Medal for hardy flowers, in which Tritonias and Dianthus Napoleon III. were features.

Mr. W. Wells, junr., Merstham, showed varieties of Phlox decussata, for which a Silver Banksian Medal was awarded.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. sec.), W. Bolton, J. Wilson Potter, F. J. Hanbury, F. Sander, Walter Cobb, R. G. Thwaites, T. Armstrong, J. Charlesworth, W. H. Hatcher, C. H. Curtis, A. Dye, E. H. Davidson, S. W. Flory, Gurney Wilson, and Sir Harry J. Veitch.

AWARD OF MERIT.

Cattleya amabilis Fowler's variety (*labiata* × *Warscewiczii*), from J. Gurney Fowler, Esq., Brackenhurst, Pembury (gr. Mr. J. Davis). A beautiful hybrid, in which the difficult task of excelling the best form of C. labiata is accomplished. The spike bore three massive flowers, the sepals and petals of which were coloured bright rosy-mauve, the lip deep rose-purple with gold lines at the base, the middle area having large yellowish-white blotches on each side, even more pronounced than in C. Warscewiczii.

GENERAL EXHIBITS.

J. Gurney Fowler, Esq., showed a grand plant of Cattleya Prince Edward (Schilleriana × Warscewiczii), with a spike of six rose-purple flowers, and Brasso-Laelia Madame Irene Mavrocordato (L. Iona nigrescens × B. Digbyana), a neat flower with reddish sepals and petals and rosy-lilac, fringed lip.

Pantia Ralli, Esq., Ashtead Park, Surrey (Orchid grower Mr. Farnes), showed Laelio-Cattleya Thyone var. Bonnie (L.-C. Ophir × C. aurea), a charming yellow form, with red lines at the base of the lip, the spike bearing four flowers; Laelio-Cattleya Anthela Ashtead Park variety (L.-C. Phryne × Warscewiczii), a distinct flower of good size, in colour pale yellow with rosy-mauve lip having gold lines from the base, and Cattleya Harrisoniana alba, with five good white flowers on the spike.

Messrs. Charlesworth and Co, Haywards Heath, were awarded a Silver Banksian Medal for a group of well-grown Orchids, comprising the fine, white-petalled Laelio-Cattleya amabilis (C. Luddemanniana Stanleyi × L.-C. Fascinator) and other Laelio-Cattleyas, Cattleya Antrope (Chamberlainiana × aurea), the fine deep crimson lip showing well in contrast with the white sepals and petals; three distinct forms of the famous Odontioda Brewii, all large and good varieties, but very dissimilar in colour; Zygo-Colax Charlesworthii, a seedling of Miltonia vexillaria, good Odontoglossum grande, Angraecum Chailluanum, Habenaria Suzannae, Paphinia cristata, Dendrobium superbiens, and hybrid Cypripediums.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged an interesting group, which included a selection of hybrids raised at Rosslyn, and for which a Silver Banksian Medal was awarded. Two white-petalled Cattleya Hardyana Countess of Derby, good C. Iris, C. Source d'Or, C. Thayeriana, C. Suavior, C. Thela (Mrs. J. W. Whiteley × Hardyana), C. Wendlandii, C. Harrisoniana alba, and an interesting selection of Laelio-Cattleyas, Odontoglossum grande Pittianium, the best yellow form; O. bictoniense album, good O. crispum; Cypripedium Germaine Opoix in fine condition, and other Cypripediums; Chondrorhyncha Chestertonii were also noted.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Banksian Medal for a varied group in which rare species were arranged with good hybrids. Cattleyas were a feature in the group, which contained fine varieties of C. Iris, C. Adula, C. Maroni, C. Mantinii, C. Lord Rothschild, C. Hardyana, and C. aurea. Good Laelio-Cattleyas, a fine form of the massive Cypripedium Franconia superbum, Bulbophyllum densiflorum, Sigmatostalix radicans, Anguloa Cliftonii citrina, good Odontoglossum grande, and curious Orchids of botanical interest were also noted.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for an effective group of showy species and hybrids. Cattleya Hardyana alba, with a spike of four white flowers, with large, deeply-coloured labellums was specially attractive: forms of C. Adula, C. Iris, and other hybrids; C. Gaskelliana Milady, a pretty white form, with pink on the lip; C. Gaskelliana alba, pure white; a good example of Laelia crispa, some well-flowered Vanda caerulea, which, however, did not show their clear blue colour to advantage in the dimly lighted hall; good Laelio-Cattleyas, forms of Brasso-Cattleya Madame Chas. Maron, Oncidium incurvum, and other Oncidiums and Dendrobiums were included.

R. G. Thwaites, Esq., Chessington, Streatham, was awarded a Bronze Banksian Medal for a small group, principally of hybrids raised at Chessington. Among the Odontiodas were the new O. crispilia (Cecilia × crispum), of a deep Indian-red colour, with white showing through on the lip; O. Cupid, O. Devossiana, and O. Bradshawiae. Others noted were good Cattleya Adula, C. Euphrasia, C. Gaskelliana alba; a very fine dark form of Laelio-Cattleya Dominiana, Miltonia vexillaria, with a very dark mask, near to Leopoldii, Odontoglossum Uro-Skinneri and other Odontoglossums.

Messrs. Hassall and Co., Southgate, showed a group of hybrids in which were forms of Cattleya iridescens, and their fine hybrid of it with C. aurea, C. Sybil, various forms of which, with sepals and petals of different tints of yellow with ruby-crimson lip, were shown, but none so fine as the variety Lord Kitchener, which gained a First-Class Certificate at the last meeting, although one of similar colour but with a broader lip is said to have bloomed. The new and pretty C. Beatrice (Mimucia × aurea), C. Thurgoodiana, C. Harrisoniana alba Stanley's variety, C. Empress Frederick alba, C. Lord Rothschild, varieties of Brasso-Cattleya Madame Chas. Maron, Laelio-Cattleya Walter Gott, and some Cypripediums were also shown.

Messrs. J. and A. McBean, Cooksbridge staged a small group of finely-grown hybrids, among which were a good dark Cattleya Hardyana with five flowers on a spike; C. Iris, with large and finely-coloured blooms; C. Rothschildiana alba, good C. Dowiana aurea, a choice yellow-petalled form of Laelio-Cattleya Thyone; Odontioda Bradshawiae, O. Diana and Peristeria elata (Dove Orchid).

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), Messrs. Jos. Cheal, W. J. Jefferies, Owen Thomas, F. Perkins, W. Bates, Horace J. Wright, Wm. Pope, A. Bullock, P. D. Tuckett, A. R. Allan, Wm. Poupart, J. Davis, Jesse Willard, A. Grubb, and E. Beckett.

Mr. J. C. Allgrove, of Langley, Bucks, who was for many years the manager of Messrs. Jas. Veitch and Sons' Langley Nurseries, was awarded a Gold Medal for a collection of 138 baskets of hardy fruits, principally Apples and Pears, with a few Medlars, Plums, and Figs. The most striking feature of this exhibit was a number of trees of Apple Rev. W. Wilks in pots. The specimens were only two years old, but they already carried several particularly fine fruits. One of the fruits weighed nearly two pounds. Amongst the varieties of Apples specially well shown were Peasgood's Nonesuch, Newtown Pippin, Emperor Alexander, Bramley's Seedling, Bismarck, Lane's Prince Albert, Warner's King, Annie Elizabeth, and, of dessert varieties, Cox's Orange Pippin, Adams's Pearmain, American Mother, and St. Everard (a variety raised from a cross between Cox's Orange Pippin and Margil). Among the Pears, the fruit of Beurré de Mortillet weighed 27 ozs.; excellent specimens of Souvenir du Congrès, Marguerite Marillat, Triomphe de Vienne, Beurré Alexander, and Seckle were shown, the latter especially being of excellent flavour.

Messrs. Dickson and Robinson, Manchester, showed eighty bulbs of Premier Onion. They were all of the largest exhibition size, solid, and without blemish. (Silver Gilt Banksian Medal.)

The Guildford Fruit Farm was awarded a Silver Banksian Medal for market boxes of Apples, principally Cox's Orange Pippin.

The Hon. Vicary Gibbs, Aldenham House, Elstree (gr. E. Beckett), showed a collection of herbs. Almost all kinds were included, such as Lovage, Myrrh, Thyme, Sage, Origanum, Sage, and Marsh Mallow. (Silver Gilt Banksian Medal.)

David Vigo, Esq., Duckett, Thaxted, was awarded a Silver Banksian Medal for a collection of fruit and vegetables.

The Church Army showed a very creditable collection of fruit and vegetables, grown on their London plots. (Bronze Knightian Medal.)

Competitive Vegetable Classes.

An exhibition of vegetables, open only to amateur growers, was held on the same date as the usual fortnightly meeting, and the judging was undertaken by members of the Fruit and Vegetable Committee. The classes numbered forty, some being for collections, and some for single dishes; there was a fair amount of competition, and the quality of the exhibits was on the whole very good. The first class was for twelve distinct vegetables, to be selected from a given list. The first prize consisted of the Sutton Challenge Cup, value £21, and £10 in money. The Hon. Vicary Gibbs, Elstree (gr. Mr. E. Beckett), was awarded the 1st prize for a very fine collection; but as this exhibitor won the 1st prize last year the cup, which cannot be held twice running by the same competitor, was awarded to the second best collection. This was shown by Mr. T. Jones, Bryn Penyllan, Ruabon. The chief varieties shown by Mr. Beckett were Cauliflower Early Giant, Leek Prizewinner, Celery Superb Pink, Onion Ailsa Craig, and Carrot New Red Intermediate. Mr. Jones showed Onion Ailsa Craig, Cauliflower Early Giant, Parsnip Tender and True, Tomato Sunrise, and Beet Blood-red.

In Class 2, for nine distinct kinds, from the same list, as in Class 1, Lord North, Wroxton Abbey, Oxfordshire (gr. E. R. Janes), obtained the 1st prize, his excellent collection including Cauliflower Autumn Giant, Carrot Early Gem, Turnip Snowball, Potato Dover Castle, and Onion Brown Globe. The second prize collection contained well-grown specimens of Celery Aldenham Prize Pink and Pea Autocrat; the name of the exhibitor was missing, the card having been removed. The 3rd prize was awarded to Sir Montagu Turner, Romford (gr. Mr. Humphrey).

In Class 3, for six kinds taken from the list drawn up for Classes 1 and 2, the Rev. J. Davies, of Crowle Vicarage, Worcester, was placed 1st for a particularly good collection, including creditable specimens of Leek Lyon, Onion Premier, Parsnip Tender and True, Carrot Scarlet Intermediate, and Tomato Moneymaker. The second prize was awarded to Mr. H. Keep, Aldermaston, Reading. His Celery and Leeks were exceptionally good.

Classes 4 and 5 were for twelve and six varieties respectively of Potatos. The quality of the exhibits was very high, and the prize-winner in the larger class, Mrs. E. H. Dennison, Little Gaddesdon, Berkhamsted (gr. Mr. A. G. Gentle), showed exceptionally well. The tubers were all of good shape, the colour even and clear, and there was every evidence of good and careful culture. The tubers of King Edward, Carter's Snowball, Reid's Seedling, Excelsior, and Purple Emperor were particularly good. The second prize for twelve varieties was awarded to G. Thorn, Esq., Willesborough, Ashford (gr. Mr. M. Hoad), for a good collection. In Class 5 (for six varieties) the Rev. — McCurdie, Weybridge (gr. Mr. Basil), gained the 1st prize. His collection was an extremely good one. Some of his varieties were Purple Eyes, Red Kidney, and Wordsley Pride. The 2nd prize was awarded to Mr. T. Butcher, of Ashford.

Class 7 was for a collection of nine distinct kinds of salad. The Hon. Vicary Gibbs obtained the 1st prize in this class, with a very good collection, including Celery Solid White, Endive Batavian, Lettuce Ideal, and Tomato Perfection. Mr. T. Jones obtained the 2nd prize, his specimens being but little inferior. Class 8 also comprised salads, this time in six varieties, the 1st prize for which was awarded to Lord North. Class 9 was for six kinds of vegetables, not hitherto specified, to be selected from a list given. The 1st prize was awarded to the Hon. Vicary Gibbs, and the 2nd prize to Lord North.

Single Dish Classes.

In the single dish classes, the Hon. Vicary Gibbs was awarded the first prize for Brussels Sprouts (Dwarf Gem), Cabbage (Imperial), Cauliflower (Early Giant), Cucumber (Matchless), Leek (Prizetaker), Marrow (Long White), Onion (Ailsa Craig), Carrot (New Red Intermediate), Turnip (Yellow Perfection), and Potatos, coloured. Lord North was successful in the classes for Scarlet Runner (Prizewinner), Beet (Black), Celeriac, and Parsnips. Lord North was successful in obtaining the Challenge Cup which is presented each year by the R.H.S. to the competitor who gains the greatest number of first prize points throughout the show, the winner of the 1st prize in Class 1 being excluded.

NATIONAL CHRYSANTHEMUM.

October and November Shows Abandoned.

September 21.—A meeting of the Executive Committee was held on Monday last at Carr's Restaurant, Mr. Thomas Bevan presiding.

It was announced that in consequence of the Crystal Palace being taken over for naval purposes the contract with the N.C.S. had been cancelled, and therefore the October and November shows would not be held. It was, however, resolved that the Floral Committee meetings at Essex Hall would be continued, and that there should be two additional floral meetings corresponding with the dates of the first days of the shows, viz., October 7 and November 4. The annual dinner will also be abandoned.

With regard to the conference, some discussion ensued, and the decision was postponed till next meeting.

The terms of a special circular, to be addressed to the members, were considered and agreed to, and among other things was the question of loss of income and the payment of subscriptions in view of no shows being held. Members will in a few days be in possession of this circular.

MANCHESTER AND NORTH OF NGLAND ORCHID.

August 13.—*Committee present:* Z. A. Ward, Esq. (in the chair), Messrs. D. McLeod, H. Thorp, A. Hanmer, J. J. Bolton, A. J. Keeling, J. Lupton, R. Ashworth, W. Shackleton, G. Weatherby, and H. Arthur (secretary).

R. Ashworth, Esq., Newchurch (gr. Mr. Gilden), was awarded a Silver-gilt Medal for a mixed group, which contained Cattleya Caducius, C. Hardyana, C. Germania, C. Gaskelliana alba var. "R. Ashworth"; Odontoglossum crispum Virginale, O. c. Xanthotes "Ashlands" var., O. c. Pescatorei Ashlandii; Miltonia Bleuana and M. Roezlii; Masdevallia Harryana splendens and Cycnoches peruviana.

Z. A. Ward, Esq., Northenden (gr. Mr. Weatherby), staged a group, a feature being the excellent culture shown in the long-bulbed section of hybrid Cattleyas.

Col. J. Rutherford, M.P., Blackburn (gr. Mr. Lupton), was awarded a Silver Medal for a small group, composed principally of Cattleyas, including the "Beardwood" var. of Gaskelliana alba.

Messrs. A. J. Keeling and Sons, Bradford, were awarded a Silver Medal for a group of Cypripediums.

AWARD OF MERIT.

Cypripedium Fairrii-tisii (*Fairrieanum* × *Curtisii*), from Messrs. A. J. Keeling and Sons.

Cultural Certificate.

To Mr. G. Weatherby, gr. to Z. A. Ward, Esq., for a plant of Cattleya × Atalanta, with a spike bearing seventeen flowers.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

September 14.—The monthly committee meeting of the above society was held at the R.H.S. Hall on Monday, the 14th inst., Mr. Arthur Bedford in the chair. Two new members were elected. Three members were allowed to withdraw double the amount of interest due to them, amounting to £10 19s.; also three members over the age of 70 years withdrew from their deposit account sums amounting to £16 18s. 6d.; and the sums of £29 9s. 6d. and £19 3s. were passed for payment to the nominees of two deceased members. The sick pay for the month on the ordinary side amounted to £53 1s., and on the State side £30 4s. 2d., and maternity claims £15. The committee wish to thank members who have sold war relief stamps, and it is hoped that when all the moneys for stamps are collected a sum of £10 will be forwarded to the National Relief Fund.

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands for the week ending Sept. 19 is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

Rather large and deep depressions, travelling from west to east across these islands, caused a very rough and unstable condition of the weather. On several occasions the wind rose to gale force on different parts of the coast, the greatest strength occurring on the 14th, when the wind blew a gale from west-south-west, veering to west or west-north-west over nearly the whole Kingdom. On the 17th the passage of a well-marked V-shaped disturbance was accompanied by a gale on our southern and several parts of our western coasts. Rain was heavier and more frequent in the west and north-west than elsewhere, and at several stations the fall on the 16th exceeded an inch. The largest measurements were about 1.3in. at Holyhead, Blackpool, and Southport, 1.5in. at Cahir, and 1.7in. at Fort William. On the same day 1.3in. was recorded at Guernsey. Thunderstorms, or thunder only, occurred at some stations in Scotland and the North of England on the 17th, and at others in the North-west and East of England on the 19th.

THE WEATHER IN WEST HERTS.

Week ending September 23, 1914.

Five degrees of frost.—This was a cold week for the time of year, and in complete contrast to the first ten days of the month, which were exceptionally warm. On three consecutive days the highest reading in the thermometer screen fell short of 60°, and on the last two nights the exposed thermometer registered respectively 1° and 5° of frost—the latter being the greatest cold experienced here as yet this autumn. The ground is at the present time 2° colder at 2 feet deep, and 3° colder at 1 foot deep, than is seasonable. Rain fell on four days, but to the total depth of only ¼ inch—making a total fall of 1¼ inch for the twelve days ending the 20th inst. On the first two days of the week small quantities of rainwater came through the bare soil gauge, but none of the rain which fell during the above-mentioned twelve days has passed through the 2½ feet of soil in the percolation gauge on which short grass is growing. The sun shone on an average for 6½ hours a day, or for two hours a day longer than is usual at the same period in September. The winds were occasionally very high for the time of year in the early part of the week, and during the windiest hour on the 17th the mean velocity reached 20 miles—direction W.N.W. This proved the highest wind recorded here since April 6. In contrast to this, the total record for the 24 hours of the 22nd inst. only amounted to 11 miles. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by as much as 10 per cent. *E. M., Berkhamsted, September 23, 1914.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. J. W. Perry, for the past two years Gardener to Panizzi Preston, Esq., J.P., Landford Manor, Salisbury, Wiltshire, as Gardener to E. K. B. Tighe, Esq., D.L., Woodstock Park, Inistioge, Co. Kilkenny, Ireland.

Mr F. W. Gallop, for the past six years Gardener to P. S. Foster, Esq., M.P., as Gardener to the Right Hon. Lord Lilford, Lilford Hall, Northamptonshire.

Mr. C. Garratt, Gardener to the late Right Hon. J. Chamberlain, Highbury, Birmingham, as Gardener to P. S. Foster, Esq., M.P., Canwell Hall, Sutton Coldfield.

Mr. A. Langford, for 3½ years Gardener to T. S. D. Wallace, Esq., and 7½ years to Colin Docwra, Esq., Heronfield, Potters Bar, as Gardener to Sir John Edwards-Moss, Bt., Thamesfield, Henley-on-Thames. [Thanks for 1s. for R.G.O.F. box.—Eds.]

California Seeds.—We learn from the American Press that on the whole the seed crops of California are likely to be light. There is practically no surplus, and as Continental supplies are not likely to be readily available, the demand will be greater than usual. There is about half a crop of Lettuces, 60 to 70 per cent. of Onions, and the Carrot crop is variable, according to the district. Parsley, Parsnips, and Endive are plentiful; Radishes are good in places. Spencer Sweet Peas are yielding a full crop, and there is a surplus of grandiflora varieties.

MARKETS.

COVENT GARDEN, September 23.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally severa imes in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz. ..	—
Asters, coloured, per doz. bnchs.	2 0- 3 0
— single, per doz. bunches ..	1 0- 1 6
— white, per doz. bunches ..	2 0- 3 0
Carnations, per dozen blooms, best American varieties ..	1 3- 1 9
— smaller, per doz. bunches ..	10 0-12 0
— Carola (crimson), extra large	2 6- 3 0
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, Almirante, bronze, per doz. blooms ..	0 9- 1 0
— Ashley, pink, per doz. bun...	3 0- 4 0
— Betty Spark, Pink, per doz. bunches ..	4 0- 6 0
Hollycott, Bronze, per doz.	0 9- 1 3
— Martin, yellow, per doz. bun....	3 0- 4 0
— Mercédès, yellow, per doz. blooms ..	1 0- 2 0
— Mrs. Beech, bronze, per doz. blooms ..	0 8-0 10
— Princess, pink, per doz. ..	2 0- 2 6
— sprays, white, per doz. bun...	4 0- 0 0
— white, per doz. blooms, medium	1 0- 1 6
— — large ..	2 0- 2 6
Eucharis, per doz.	1 6- 2 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 2 0
Giant Daisies, per doz. bunches ..	0 9- 1 6
Gladiolus brenchleyensis, scarlet, per doz. spikes	2 0- 2 6
Lapageria alba, per doz. blooms ..	1 6- 2 0
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long..	2 0- 2 3
— — short ..	2 6 —
Lilium lancifolium album, long ..	1 0- 1 6
— — — short ..	1 0- 1 6
— — rubrum, per doz., long ..	1 0- 1 3
— — — short ..	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	0 9- 1 0
Michaelmas Daisies, per doz. bunches ..	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Harrisonii, per doz. blooms ..	4 0- 5 0
— Odontoglossum crispum ..	2 0- 3 0
Pancratium, per dozen blooms..	1 0- 2 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches ..	3 0- 4 0
Physalis, per doz. bun.	4 0- 6 0
Roses: per dozen blooms, Bride	0 6- 1 0
— Bulgaria ..	1 0- 1 6
— Frau Karl Druschki ..	1 0- 1 6
— Kaiserin Augusta Victoria	0 0- 1 0
— Lady Hillingdon	0 9- 1 0
— Liberty ..	1 0- 1 6
— Madame A. Chatenay ..	1 0- 1 6
— Melody ..	1 0- 1 3
— My Maryland..	0 9- 1 3
— Niphetos ..	0 0- 1 0
— Richmond ..	0 9- 1 0
— Sunburst ..	1 0- 1 6
— Sunrise ..	0 9- 1 0
— White Crawford	0 9- 1 0
Scabiosa, mauve, per doz. bnchs.	2 6- 3 0
Statice, mauve, per doz. bunches..	1 6- 2 0
— white, per doz. bunches ..	2 0- 3 0
Stephanotis, per 72 pips	2 0- 2 6
Sweet Sultan, mauve per doz. bnchs.	1 6- 2 0
— white	1 6- 2 0
Violets, English, per doz. bunches ..	1 6- 2 0
White Heather, per doz. bunches..	4 0- 6 0

Remarks.—An improvement in business shortly was suggested last week, and this is already in evidence. The recent showers and cold nights are partly accountable for a rise in prices, and shortness of supply in some cases. This is chiefly noticeable among Carnations, Roses, Liliums, and Lily-of-the-Valley. Supplies of Stephanotis and Asters are gradually decreasing. Good white spray Chrysanthemums are somewhat scarcer, Roi des Blancs being the best on the market now. Blooms of large and medium size are chiefly required, especially white, among which are Duchess, Débutante, and Countess. Bronze varieties are Almirante and Mrs. Beech. There is no great demand for pink, but Cranford Pink is the best; and for yellow, Mercédès and Cranford Yellow, the latter being an excellent market variety. There is an abundant supply of Michaelmas Daisies, Physalis, Statice, and several varieties of hardy foliage. Violets are increasing in numbers, but they will arrive in better condition when the weather gets cooler, as the best Violets come from the West of England.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated ..	30 0-60 0
Asters, Coloured, 48's, per dozen	3 0- 4 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Croton, per dozen	18 0-30 0
Cyclamen, 48's, per doz.	10 0-12 6
Dracaena, green, per dozen ..	10 0-12 0
Erica nivalis, 48's, per dozen ..	12 0-15 0
— — thumbs, per doz. ..	3 0- 5 0
— gracilis, thumbs, per doz. ..	3 0- 5 0
— — 48's, per doz.	9 0-12 0
Ferns, in thumbs, per 100.. ..	8 0-12

Plants in Pots, &c: Average Wholesale Prices, *contd.*

	s. d. s. d.		s. d. s. d.
Ferns, in small and large 60's ..	12 0-20 0	Lilium lancifolium album, pr. doz.	18 0-24 0
— in 48's, per dozen	5 0- 6 0	— — rubrum, per doz. ..	15 0-21 0
— choicer sorts, per dozen ..	8 0-12 0	— longiflorum, per dozen	12 0-15 0
— in 32's, per doz.	10 0-18 0	Lily-of-the-Valley	—
Ficus repens, 48's, per doz. ..	4 6- 5 0	— 48's, per dozen	21 0-30 0
— — 60's, per doz.	3 0- 3 6	Marguerites, in 48's, per doz., white	—
Geonoma gracilis 60's per dozen ..	6 0- 8 0	Palms, Cocos Weddeliana, 48's, per doz. ..	18 0-30 0
— larger, each ..	2 6- 7 6	— — — 60's, per doz.	8 0-12 0
Hydrangeas, pink, per doz. 48's ..	10 0-18 0	Pandanus Veitchii, per dozen ..	36 0-48 0
Kentia Belmoreana, per dozen	5 0- 8 0	Phoenix rupicola, each	2 6-21 0
— Forsteriana, 60's, per dozen ..	4 0- 8 0	Solanums, 48's, per dozen	8 0- 9 0
— — larger, per doz.	18 0-36 0	Spiraea, white, 32's per dozen ..	6 0- 8 0
Latania borbonica, per dozen ..	12 0-30 0	— pink, 32's, per dozen	9 0-12 0

REMARKS.—There is no news to record in this department. Ericas are the chief attraction; the quality all round is better, and prices are lower. Small plants in thumb pots sell readily. Chrysanthemums should receive more attention; some fine plants of white, yellow, pink and bronze colours are available. The Fern trade remains steady.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s.d. s.d.
Apples—		Grapes (*continued*)—	
— Californian, Newtown pippins, per box ..	7 6 —	— English, Gros Colmar, per lb.	0 9- 1 3
— English dessert, per ½ bushel ..	2 6- 4 0	— Gros Maroc, per lb. ..	0 9- 1 0
— cooking, 1 bush.	1 6- 3 0	— Muscat of Alexandria ..	1 0- 2 6
Bananas, bunch:		— Canon Hall, per lb.	1 0- 3 0
— Double Ex. ..	8 0-9 0	Lemons, per case ..	15 0-40 0
— Extra	7 0-7 6	Melons, English ..	1 6- 2 0
— Medium ..	6 0- 6 6	Nuts, Brazils, per cwt.	60 0 —
— Giant	9 0- 9 6	— Walnuts (English), per doz. lb.	6 0- 8 0
— Extra-medium	6 0 —	Peaches, English, per doz. ..	1 0- 8 0
— Red, per ton ..	£20 —	Pears, Californian, per case ..	7 6-10 6
— Jamaica, p. ton	£15 —	— English, ½ sieve	3 0- 4 0
Blackberries, per peck	1 0- 1 6	Plums, English, per ½ bushel ..	3 0- 5 0
Cobnuts, per lb. ..	0 5 —	Sloes, per doz. lbs.	2 0- 2 6
Damsons, per ½ sieve	1 0- 1 6		
Figs, English, per doz.	1 0- 2 0		
Grapes: Black Hamburgh, per lb.	0 8- 1 6		

REMARKS.—Some very fine samples of both cooking and dessert Apples are reaching the market. The first arrivals of Californian Newtown are to hand this week. The market continues to be well supplied with Pears of all seasonable varieties. California is also contributing some good specimens. Of Plums a few Pond's Seedling and Monarch are obtainable. Damsons are very plentiful. Californian Plums now arriving consist of the following varieties:—Coe's Golden Drop and Silver Prunes. Peaches continue fairly plentiful. Sloes are very abundant this season. Melons continue to yield a fairly good supply. Grapes of all varieties are plentiful. Cobnuts and Walnuts are available in larger quantities. Outdoor Mushrooms are plentiful, but the supply of cultivated varieties is limited. Large quantities of Tomatos are arriving from Jersey, and there is a big supply from plants out-of-doors. Tomatos from home growers have not been quite so plentiful this week.—*E. H. R., Covent Garden, September 23, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Artichokes, Globe, per doz. ..	0- 5 0	Mushrooms, cultivated per lb...	1 6 —
Beans, French, per ½ bus.	3 0- 4 0	— Buttons ..	1 6 —
— Scarlet Runner, per bushel ..	2 0- 2 6	— Field, per bus.	2 6-3 1½
Beetroot, per doz. bunches ..	1 0- 1 3	Mustard and Cress, per dozen punnets	0 10- 1 0
Brussels Sprouts, per ½ bus. ..	4 0 —	Onions, per bus ..	2 6 —
Cabbages, per tally	5 0-10 0	Parsley, per dozen bunches ..	1 0- 2 0
Carrots, per doz. ..	2 0- 3 0	Peas, English, bushel	5 0- 6 0
Cauliflowers, per tally .. .	8 0- 9 0	Radishes, per doz.	0 9 —
Celery, per bundle	0 9- 1 9	Sage, per dozen ..	2 0- 4 0
Cucumbers, per flat	4 0- 5 0	Spinach, per bushel	1 0 —
Garlic, per lb. ..	1 0- 1 3	Tomatos, English, per doz. lbs. ..	2 3- 2 9
Horseradish, per bundle	3 6- 4 0	— seconds ..	1 6- 2 0
Leeks, per dozen ..	1 6- —	Thyme, per dozen bunches ..	2 0- 6 0
Lettuce, round, per doz.	1 0- 1 3	Turnip, English, per dozen bunches	2 0- 3 0
Marrows, per tally	5 0-10 0	Watercress, per doz.	0 4- 0 6
Mint, per doz. ..	2 0- 4 0		

REMARKS.—Vegetables of all ordinary kinds are yielding an average supply.—*E. H. R., Covent Garden, September 23, 1914.*

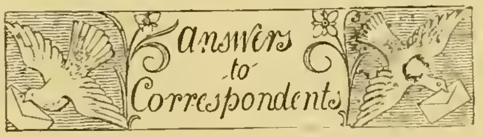
New Potatos.

	s. d. s. d.		s. d. s.d.
Bedford	3 0- 3 6	Kent	3 3- 4 0
Blackland	2 9- 3 3		
Lincoln	3 0- 4 0	Essex	3 0- 3 6

REMARKS.—The market is well supplied, but the demand is only moderate. Prices are about the same as last week. Stocks in London are very large.—*Edward J. Newborn, Covent Garden and St. Pancras, September 23, 1914.*

Obituary.

JOHN McELVERY.—The *American Florist* records the death, on August 25, of John McElvery, a gardener and florist, of Brooklyn, New York. Mr. McElvery was a native of Ireland, but emigrated with his parents to America when about eleven years old. For a considerable time he made a speciality of Water-lily culture, and attained much success. He was seventy-nine years of age.



Answers to Correspondents

BAG OF ONIONS: *F. A.* A market bag of Onions contains approximately one cwt.

CELERY: *J. S. M.* The plants have "bolted." probably because of the dry season. No disease is present.

CALANTHE VEITCHII UNHEALTHY: *H. W. D.* The trouble is due to an excess of moisture, and not to organic disease. Keep the atmosphere drier, and ventilate the house freely when the weather is favourable.

"FRENCH" GARDEN. *G. T.*—September is the best month in which to lay the foundation for next season's cropping, and the following plan is recommended for the different classes of work:—(1) Cold cultivation, which will be very prominent next year as the sole method to employ all the material without or with very little manure. (2) The Melon quarters should be changed yearly as the best way to improve and trench a poor piece of ground. (3) The open-air crops, which always do well in succession to the Melon quarter of the previous season. (4) The winter quarter for rearing Lettuces and Cauliflowers for spring. The hot-beds are usually made at the same place. Once the plan is ready, the ground allotted to the rearing of the seedlings through the winter is cleaned of all refuse and weeds; manure the ground heavily for the benefit of the crops which have to follow in the spring and dig it deeply. The black soil, which will be used for top-dressing these quarters, must be broken up at an early date and passed through the ½-inch mesh screen while the weather keeps dry. Preparations should be made for sowing the Cauliflowers for spring use by filling one or two frames with black soil. Insert the seeds very thinly. It is desirable to sow for planting outside in March in the first week in October. The Snowball is an excellent variety for the purpose. Erfurt is also to be recommended, whilst All-the-Year-Round, Driancourt, and Early Parisian should be reserved for planting in the open. If other sorts are preferred, select those of a dwarf growth with small foliage, and with a close and firm inflorescence.

GROUND OVERRUN WITH BALSAM: *Delta.* We suspect the plant is Convolvulus or Bindweed, for the two British species of Balsam are annuals, and not perpetuated by underground stems. Your best plan is to dig the soil deeply, remove every trace of the "roots," and destroy by burning. Do not employ weed-killer, as that might do more harm than good.

HEATH TWINED WITH CURIOUS, LEAFLESS GROWTH: *Interested.* The curious, leafless growth on your Ericas is Cuscuta Epithymum, the Lesser Dodder. The plant is a parasite and belongs to the Convolvulus family. It grows wild in many parts of Britain.

INSECT FOR IDENTIFICATION: *Insect.* The specimen forwarded is an example of one of the so-called Shield bugs, viz., Tropicorius rufipes. This species is frequently met with in woods, fields and gardens. Its food is, in all probability, mainly vegetarian, and it has been known to cause considerable damage to Cherry trees in this country.

MEALY BUG: *A. G.* The most effective method of destroying mealy bug is by fumigation with hydrocyanic acid gas, on which subject there is an article in the *Gardeners' Chronicle* for July 25, 1914 (pp. 65-66). There is also considerable correspondence on the matter in former issues of this paper, notably that for December 27, 1913 (p. 462).

NAMES OF FRUITS: *J. J. G., Calne.* Siberian Crab.—*W. B.* 1, Gravenstein; 2, Charles Ross.—*C. W.* 1, Emperor Alexander; 2, Yorkshire Greening; 3, Bramley's Seedling; 4, Golden Noble; 5, the specimen was crushed; 6, Plum Monarch.—*W. E. P.* 1, Ecklinville Seedling; 2, missing; 3, Nonesuch; 4, Lord Suffield; 5, Lady Derby (syn. Whorle Pippin); 6, Forge. *J. M.* 16, Beurré Superfin; 24, Comte de Lamy; 6, Beurré Superfin; 25, Conseiller de la Cour; 49, Beurré Clairgeau; 46, Flemish Beauty; 4, Chaumontel; 23, Marie Louise; 22, Bergamotte Esperen; 47, Joséphine de Malines; 28, Marie Louise d'Uccle; 50, Marie Louise; 29, Beurré Diel. — *Willis Brunt.* Pears: 1, Beurré d'Amanlis; 2, Passe Colmar. Apple: Gogar Pippin (syn. Stone Pippin).—*S. N.* 1, Beurré d'Amanlis; 2, Beurré Clairgeau; 3, X, not recognised; 4, Beurré Bachelier; 5, Maréchal de la Cour. —*H. C.* 1, Durondeau; 2, Brockworth Park; 3, Williams' Bon Chrêtien: 4, Beurré Bosc; 5, Doyenné du Comice; 6, Maréchal de la Cour; 7, Beurré Clairgeau; 8, Pitmaston Duchess; 9, Queen Caroline.—*W. G. M.* 1 and 2 not recognised; 3, Cellini; 4, Stirling Castle; 5, Cox's Pomona; 6, Tom Putt.

NAMES OF PLANTS: *G. S. Elgin.* 1, Ulmus campestris var. Louis van Houtte; 2, Pyrus arbutifolia.—*J. S.* Caryopteris Mastacanthus.

ROSES FOR A LIGHT SOIL: *A. J. G., Calne.* The following varieties will succeed in your light, sandy soil:—Boule de Neige, Charles Lefebvre, Dr. Andry, Eugène Furst, Fisher Holmes, Frau Karl Druschki, General Jacqueminot, Hugh Dickson, Mrs. John Laing and Ulrich Brunner, all with the exception of the first-named being Hybrid Perpetuals. Of Hybrid Teas you will find suitable varieties in Admiral Dewey, Amateur Teyssier, Antoine Rivoire, Augustine Guinoisseau, Betty, Caroline Testout, Clara Watson, Colonel Leclerc, Countess of Derby, Countess of Gosford, Countess of Shaftesbury, Dorothy Page Roberts, Dr. O'Donel Brown, Duchess of Wellington, Ecarlate, Edu Meyer, Florence H. Veitch, General McArthur, Gloire Lyonnaise, Grace Darling, Grand Duç Adolphe de Luxembourg, Gruss an Teplitz, Gustav Grünerwald, James Coey, Johanna Sebus, Jonkheer J. L. Mock, Joseph Hill, Killarney, La France, La Tosca, Lady Ashtown, Lady Pirrie, Lady Ursula, Laurent Carle, Madame Abel Chatenay, Madame Jules Grolez, Mme. Léon Pain, Madame Ravary, Mme. Segond Weber, Mary Countess of Ilchester, Mrs. Aaron Ward, Mrs. Arthur Munt, Mrs. A. R. Waddell, Prince de Bulgarie, Souvenir du Président Carnot. Other good sorts for your purpose are (Pernetiana) Arthur R. Goodwin; (Tea-scented) General Schablikine, Lady Roberts, Madame Antoine Mari, Madame Falcot, Madame Hoste, Mme. Jean Dupuy, Madame Lambard, Marie van Houtte, Mrs. Herbert Stevens, Paula, W. R. Smith; (China or Monthly) Comtesse du Cayla; (Polyantha) Jessie, Orleans.

SWEET PEAS WITH GRUBS: *A. H., Worcester.* The Sweet Pea seeds are infested with the Pea or Bean beetle Bruchus pisi. The larvae of this insect enter the seeds when they are quite young, and therein complete the whole of the life-cycle. The seeds should be destroyed. The beetles can be killed by the fumes of bisulphide of carbon, but we do not recommend this course.

Communications Received.—M. A. C.—A. L. B. D. K.—C. D. H.—D. V. M.—R. P. S.—B. of A., Hawick—R. P. B.—Constant Reader—R. G.—H. B. E. W. P.—H. T. S.—S. A. S.—Miss B. B.—E. P.—F. E. J.—G. B.—E. W. S.—D. D.—R. D. G.

THE
Gardeners' Chronicle
No. 1,449.—SATURDAY, OCTOBER 3, 1914.

CONTENTS.

Agricultural returns .. 237
American purchases of seeds in England .. 238
Apple Charles Ross .. 237
Apples and Pears, storing and grading .. 233
Appointments 237
Basic slag and grassland 239
Botanical Magazine .. 239
Botany at the British Association 236
Broccoli, old and new .. 240
Bulb garden 232
Cattleya Mossiae .. 236
Chimonanthus fragrans 241
Eucalyptus, the genus 237
Euphorbia 230
Farrer's, Mr. Reginald, explorations in China 241
Flowers in the south-west 231
Fruit culture at Baghdad 229
Gentiana septemfida var. lagodeehiana 232
Germans visit a French nursery 236
Holboellia latifolia .. 241
Kew notes 240
Lilium sulphureum in Australia 240
Obituary—
  Chapman, Samuel .. 243
  Cypher, Frank .. 243
  Horscroft, Samuel .. 243
  Iggulden, W... .. 243
Orchid notes and gleanings 230
Our duty in war-time .. 241
Peach, fruit of the double-flowered .. 239
Peaches and Nectarines at Aldenham House .. 240
Peas, late culinary . 241
Potato, wart disease of 237
Red House, Harrow .. 240
R.H.S. meetings .. 237
Seed, method of preserving, for shipment 237
Semele androgyna fruiting in Devonshire .. 241
Small-holders, technical instruction for .. 237
Smoke, the effect of, on Pineapples .. 239
Societies—
  Debating 242
  National Chrysanthemum 242
  National Sweet Pea .. 242
  Royal Horticultural .. 242
Sweet William, origin of the name 241
Tropaeolum speciosum 241
War items 238
Week's work, the 234, 235
Wheat, extension of area under 237
Winter employment on country estates .. 240

ILLUSTRATIONS.

Cattleya Mossiae as grown at Heaton Mersey. (Supplementary Illustration.)
Colchicums in the pleasure grounds at Madresfield Court, Malvern 234
Euphorbia, remarkable instance of reversion in 230
Gentiana septemfida var. lagodechiana 232
Lilium Henryi 233, L. sulphureum in an Australian garden 239
Pileostegia viburnoides 238

FRUIT CULTURE AT BAGHDAD.

AFTER journeying for five days up the Tigris from Busreh, near the head of the Persian Gulf, the traveller becomes aware that he is approaching Baghdad. There is a rapid transition of the country on both sides of the river from a barren plain to a region of Date plantations, the Palms interspersed with Oranges, Pomegranates and other fruits. For four out of the five days since leaving Busreh the monotony of the bare Mesopotamian plain stretching away on either side as far as the eye can reach has been broken only by the occasional appearance of a small village, nestling on the river bank among a cluster of Palms, and perhaps boasting a small garden of fruit trees for supplying the table of the local shaykh.

The fringe of cultivation which borders the Tigris for nearly twenty miles on either side of Baghdad extends right into the heart of the city itself, the date Palms mingling with the buildings and occupying every spare corner of ground in true oriental fashion. The business section of the city extends along the river for perhaps half a mile; above and below it, always facing the water, are the residences of wealthy merchants, Turkish officials, and the few Europeans who reside permanently in Baghdad. Adjacent to these residences are to be seen the only gardens of which the city can boast, the difficulty of obtaining water—since there are practically no canals of any length—and the crowding together of the houses in the native quarter, which extends back into the plain a mile or more, prohibiting the culture of practically anything except the omnipresent Palm.

It is scarcely necessary to say that the culture of the Date is the most important horticultural industry of Baghdad. No other product can ever appeal to the Arab as does the Date; not only does it require the least cultural attention of all the fruits he grows, but its sweet and syrupy fruit suits his palate perfectly. It has been roughly estimated that there are, in the district contiguous to Baghdad, one million Palms. The plantations vary in size from a few acres, or even a few trees, to the immense property of the late Kazim Pasha, seven miles above the city, whose extent the Arab describes by saying that one can enter it at sunrise, walk all morning, and not have reached the other side by noon. While the Turks have obtained control of some of the largest plantations, many of them are still owned by wealthy Arabs, who take a keen interest in the Date, not only becoming expert in identifying varieties by the character and foliage of the Palm, but having a wide acquaintance with the varieties of the entire Arabian peninsula. But in spite of the Arab proverb

> "Dig for a hundred days,
> Irrigate for one,"

they do not, as a rule, expend any more labour on the plantations than is absolutely necessary, and consider the application of manure a waste of time, with the result that quantities of valuable fertilising materials are allowed to go to waste. Water is drawn from the river by means of a primitive contrivance called the *kirid*, which consists of a bullock-skin bag attached to a long rope, raised and lowered over a pulley by means of bullocks or horses. In a few of the plantations oil engines, introduced by an enterprising European firm in Baghdad, have displaced the *kirid*, and have made a decided hit with the Arabs.

With the exception of the famous Khalaseh Date, produced in the Turkish province of Hasa in Eastern Arabia, the Dates of Baghdad are the finest in the so-called Persian Gulf region. Furthermore, there is probably no other region in the world where so large a proportion of all the varieties cultivated are of excellent quality. Baghdad has very few varieties that can be called poor, while the best are almost the equal of any in the world. Here as elsewhere, however, the choicest varieties are the rarest, and are never to be obtained in the bazaars.

Zahidi is the most extensively grown of all varieties. It is not a high-class Date, and has only obtained its popularity because of the fact that it is extremely productive, and hence profitable to cultivate. It has the advantage that the fruit can be sold either soft or dried; in the soft or fresh state it is called Zahidi Kursi, while the dried fruit goes under the name of Zahidi Yabis.

Next in popularity comes Khustawi, an excellent soft Date, rather small in size, but of excellent, rich flavour. It cannot approach in quality either Sukkari, Maktum, or Tabirzal, the choicest varieties of the region, but these, with the exception of Maktum, are rarely offered for sale, the entire crop being reserved by the growers for their personal use, or to present to their friends. Asharasi, a large dry Date, is also popular, and must be classed as one of the finest dry Dates in existence.

Next in importance among commercial fruits comes the Orange. Baghdad Oranges are famed throughout the Persian Gulf, large quantities being shipped down the Tigris and across to neighbouring Persian Gulf ports, while it is not uncommon to see a camel train starting out with huge baskets of Oranges, carefully packed in straw, destined to be consumed in Karbala, Hilleh, and other villages far off in the desert.

Nearly all the Oranges grown in Baghdad are produced as subsidiary crops under the Date Palms. The reason for this is not economy of space so much as the necessity of giving the trees some protection from the occasional sharp frosts of winter. While most of the trees are seedlings, the fruit is exceptionally uniform in character, practically the only variation being in size. The Baghdad Orange—*portugal* it is called by the Arabs—is a brightly-coloured, thin-skinned fruit, with few seeds and abundant juice of excellent flavour; in fact a very superior Orange, considering the small amount of attention given to its culture and improvement. The more progressive Arabs are learning to bud the Orange, and budded trees are now being planted in place of seedlings.

Several other Citrus fruits are fairly common. The most valuable is probably the *Lumi hamith*, or Lemon, of which the local variety, although rather small and somewhat seedy, is not to be sneered at. While one does not often see Lemon trees in the gardens, the fruit is nearly always obtainable in the bazaars. Without doubt this is due to the fact that the Arabs, as a rule, pass it off for a sweeter fruit, such, for instance, as the Sweet Lime or *Lumi halu*, a fruit that is absolutely tasteless to a European, while to the Arab it is far and away the best of the Citrus tribe. It is scarcely as common at Baghdad as it is on the borders of the Persian Gulf. Its large size and bright appearance are very attractive, but the pulp, although extremely juicy, has almost no flavour except an insipid sweetness.

In addition to these, one sometimes sees the *Narinja*, or Mandarin Orange, and also the *Turunja*, or Citron. The varieties of each seem to be quite up to the standard of other countries; one is forced to remark, in fact, on the uniformly good quality of the Baghdad Citrus fruits, a fact not in keeping with the condition of most other introduced fruits, nor with the Arab's lack of interest in horticulture.

In late autumn the Pomegranate is almost as popular as is the Orange during the winter. Most of the fruit sold in the Baghdad bazaars is said to be brought in from the surrounding towns, although the shrub is grown in almost every Baghdad garden. A number of varieties exist, some of them being of good quality, though it is doubtful if any of them are as fine flavoured as the Masqat Pomegranates. Neither do they show any tendency to become seedless, as is claimed for some varieties both in Southern Spain and Afghanistan. Ordinarily they are divided into three general classes, *rumman ahmar* (red Pomegranate), *aswad* (black), and *halwa* (sweet), which suffices for bazaar purposes. Several named varieties are known in a limited way, Salimi being considered the best. Ragawi, characterised by an unusually prominent calyx, Halu, Aswad, and Amlasi are other more or less well-known forms.

The best Baghdad Pomegranates are six inches in diameter, and are sold in the bazaars for the equivalent or three or four pence each. This price being beyond the reach of the poorer classes, many merchants make a business of selling a portion of a fruit, of any size the purchaser desires. One can often see groups of Arabs gathered around such a merchant in the bazaar, purchasing one or two *metaliks* worth of Pomegranate flesh, and consuming it on the spot.

Among minor fruits may be mentioned Grapes, Figs, Mulberries, Apples, Plums, Peaches, Apricots, and the *Nabk* or Jujube. None of these plays an important part in commercial horticulture. Grapes are occasionally seen on arbours and trellises in private gardens. Here, too, are to be found the Fig trees, which appear to be of small and not particularly choice varieties, judging from the dried fruits. The *Nabk* is one of the most conspicuous trees in the city, but is valued more for its shade than for the fruit it produces, which is, in the majority of cases, small and almost worthless. There is great variation in this fruit, and the best varieties are the size of a Date, pleasantly subacid in flavour, and are known under varietal names. The latter are usually given according to the variety of Date the fruit was thought most to resemble; thus there are Zahidi, Maktum, Asharasi, Khustawi, and others. The fruit is strung on threads and offered in the bazaars at a low price.

Mulberries are grown for much the same reason as the *Nabk*. They require little attention and provide good shade during the summer months. The fruit is used, but not esteemed, with the exception of the large Persian variety, which seems to be very scarce.

Very few Apples are grown at Baghdad, most of the fruit offered in the bazaars coming from Persia. Six varieties, however, are known in Baghdad gardens, and seem to succeed fairly well. The best one is called Shurabi, and is the latest to ripen. Kufi is probably next best, but is extremely rare. Ajmi is the earliest variety. Others are Sukkari, Arnauti, and Rahabi. The Apple is known to the Arabs as *Tuffah*.

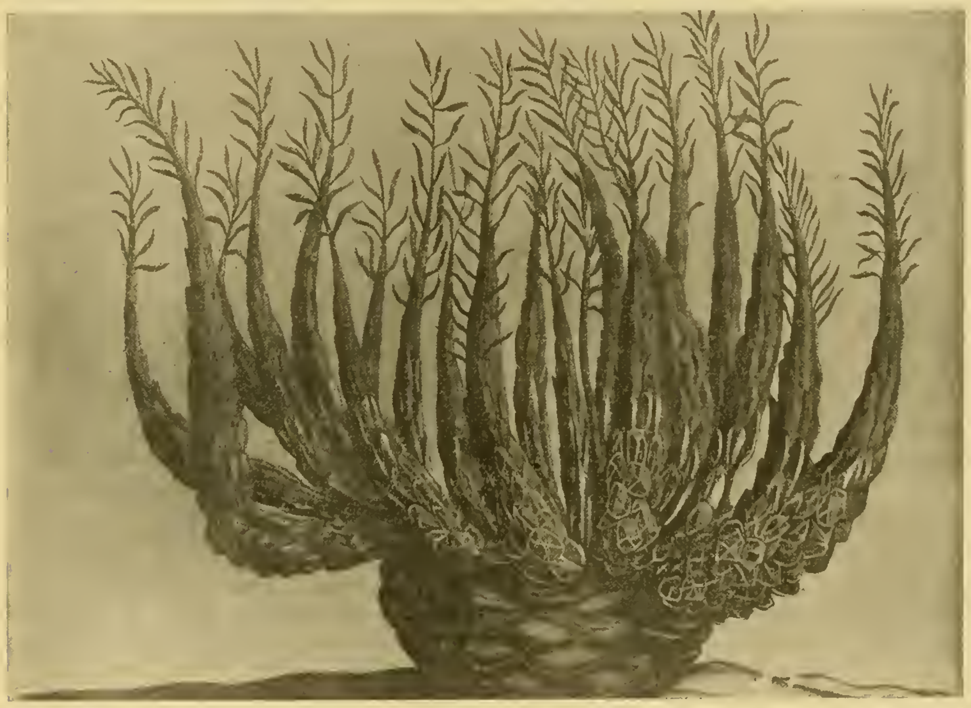


Fig. 91.—Reversion in Euphorbia.
(From *Horti Medici Amstelodamensis.*)

Peaches are scarcely more common than Apples, and are not considered of very good quality by Europeans, probably because of the inferiority of the varieties. The best is Sufi asfar, which is the first to ripen, but it is too scarce to appear in the bazaars. Other varieties are Sufi ahmar, Sufi abyadh, Sufi taflisi, Mizki asfar, Mizki ahmar, Arsasi ahmar and Arsasi akhdhar.

The Apricots of Baghdad are small and inferior. The trees are not common, but seem to succeed fairly well, and should become popular if a choice variety could be introduced. The same may be said of Plums.

In conditions of climate, abundant water supply, and freedom from insect pests Baghdad seems pre-eminently suited to fruit culture. This fact is testified to by the comparative abundance of fruits at the present time, and the good quality of many of them. With the exception of the Date, however, there is probably no fruit of which better varieties could not be obtained from foreign countries. In view of the fact that Baghdad has not only its own 200,000 inhabitants to supply, but a wide range of territory on all sides of it, it is to be hoped that an effort will be made by the European residents to introduce superior forms of all these fruits. With its vast undeveloped resources, Mesopotamia has much to expect of the future, and the development of its fruit industries should be given the attention it deserves. *F. W. Popenoe, Altadena, Los Angeles, U.S.A.*

ORCHID NOTES AND GLEANINGS.

MILTONIA SPECTABILIS VIRGINALIS.

This distinct and rare form of Miltonia spectabilis has flowered with Chas. Costeker, Esq., The Willows, Lytham, Lancashire, the plant having been imported by Messrs. Mansell and Hatcher with M. spectabilis Moreliana. The flower is 3 inches across at the widest, and of a clear white, the lip having a striated blotch of violet colour. The wings of the column are of the same tint, and the crest yellow.

It was first shown by Messrs. Jas. Veitch and Sons at a meeting of the Royal Horticultural Society on May 18, 1869, when it received a First-class Certificate. An allied form with a larger blotch on the lip was known in gardens as Miltonia bicolor, and is now called M. spectabilis bicolor, a name which would be more appropriate for both in the section.

ONCIDIUM LANCEANUM.

A fine spike of this beautiful and fragrant Oncidium sent by Mr. H. Haddon, gr. to J. J. Neale, Esq., Lynwood, Penarth, together with a note of his success with the species with which so few cultivators do well, proves that the plant is amenable to cultivation if properly treated.

Mr. Haddon says: "I had one plant here four years ago, and by cutting the rhizome and causing the plant to break from the older portion —which if not so treated would have been unproductive of either growth or flower—I have now three good plants, and two of them have flowered freely with two spikes each. I grow them with the warm Cypripediums."

The last remark is significant, for it points to treatment in a higher temperature and moister atmosphere than obtain in the intermediate house, in which the plant is usually found in declining health.

The flowers, which are over 2½ inches across, have the sepals and petals of a greenish-yellow colour, the sepals tinged and spotted with dark claret-red, the petals densely spotted with the same colour. The base of the lip is purple, the front bright rose colour.

The species has rudimentary pseudo-bulbs and large fleshy green leaves spotted with reddish-brown, and when healthy is always an ornamental plant.

It was first introduced from Surinam in 1838, and has since been imported from Trinidad, Grenada and warm, moist districts in South America.

A REMARKABLE CASE OF REVERSION IN EUPHORBIA.

The genus Euphorbia in its range of variation of vegetative characters is, perhaps, the most remarkable of all flowering plants. Not only is it one of the largest of genera, containing over 1,200 species, but in appearance and habit it varies enormously. Tiny annuals, small and large herbaceous perennials of very diverse habit, tubers, leafy and leafless woody shrubs and trees, and a great variety of succulent forms, some of them only two or three inches high, others large shrubs or trees, are all to be found in this genus. Yet in spite of this wide divergence in vegetative character, the flowers remain remarkably uniform. It is to one of the dwarf succulent kinds that I wish to direct attention in this note.

Most of the succulent species are natives of the drier parts of Tropical and South Africa, and those who have had experience in importing succulent plants from South Africa are well aware that after a short period of cultivation in Britain many of them alter considerably in appearance. This I have found to be particularly the case with various succulent species of Euphorbia belonging to the group of which the plant represented in fig. 91 is an example, where the main stem or body of the plant consists of a thick globose or pear-shaped fleshy mass, covered with tubercles, and bearing a crown of branches around its more or less flattened or depressed top. The native-grown branches of many (but not all) of the species of this group when first imported vary from one-quarter of an inch to one and a-half inch in length, and the outer are more or less horizontally spreading. But after a season's growth in this country, owing to a more humid atmosphere than that to which they have been accustomed, they generally become twice, or more than twice, as long as the native-grown branches, and their tips become tapering and curve upwards; and this in spite of our driest atmospheric conditions and a minimum amount of water. A good example occurred in the exceptionally dry season of 1911, when at Kew we had forty days without rain during a very hot summer. At the beginning of this period a plant of E. gorgonis, Berger, was sent to me from South Africa, with full-sized native-grown branches half an inch to one inch long upon it. I planted it in a dry place in the open air in the full glare of the sun, and at the end of five weeks its branches had grown to one and a-half to two inches long, tapering towards the tips, which were upcurved. The leaves also were twice as large as those developed in South Africa. Here was a case of a rapid change under the driest and hottest conditions of our climate, but the most remarkable and interesting example of this alteration in character that I know of is that represented in fig. 91, which is a photographic copy of a figure given by Commelin in his *Horti Medici Amstelodamensis*, p. 33, t. 17, published in 1697. I am not sure as to the species, but think it very probable that it is E. gorgonis above-mentioned; if so, it illustrates the type of plant that that species might be expected to revert to under a very gradual change of climate. The figure is a most instructive one. It will be noted that the basal parts of the branches are thicker, more tuberculate and the outer at least are widely spreading at this part, which represents the actual character of the branches of a newly-imported plant; for they would then be about an inch or less in length, very obtuse at the apex, and widely-spreading. From the alteration in growth I feel sure that the plant was placed in a warm, damp atmosphere, which caused the branches to start growing at the tips (which they would not do under natural conditions) and to taper and become less fleshy and more herbaceous at the apex, indicating a lesser need to store up water. At the same time they have become erect and more leafy, and the tubercles have gradually disappeared from the slender herbaceous part. The leaves also are much larger and more in evidence than on the wild plant. At the centre of the plant are two erect branches, which were probably entirely developed under cultivation. One of them bears very imperfect elongated tubercles, whilst the other is slender, terete, and resembles an ordinary herbaceous stem, so totally different in character from the normal tuberculate, fleshy, spreading branches of the wild plant that except for the connection with the other branches it could never be supposed to belong to the same species.

Here, then, we have a splendid object-lesson in evolution, for in a single season this plant altered the character of a portion of its growth from that of a nearly leafless succulent to that of a sub-herbaceous, leafy plant.

These succulent species grow in the driest parts of South Africa, where they get plenty of sun but very little moisture. If we imagine that the climate were to change to a more humid one, very slowly, this figure shows us what would probably happen. The plants would gradually get acclimatised to more and more moisture, and would respond to such a condition. Their short, spreading, fleshy branches would become very gradually less and less succulent, more and more elongated and erect, with a gradually increasing development of leaf, until they assumed a more or less herbaceous character. Meanwhile, the globose main stem would probably lose a great deal of its size and fleshy nature, and gradually assume the character of a thickened rootstock, giving rise at its crown to a number of erect herbaceous leafy stems. Thus in the course of a gradual change of climate operating through many centuries of time, a succulent plant of the E. gorgonis type might become changed into one of the type to which our British species E. hyberna and E. pilosa belong, or one of the latter type into one of a succulent type, in accordance with the conditions of heat and moisture.

The species of Euphorbia are so widely spread over all parts of the tropical and temperate regions of the globe that it is probably a genus of great antiquity, and the manner in which its units have responded to changes of climatic conditions through long ages, together with the operation of hybridisation, has probably resulted in the very large number of types of form at present existing in this genus.

With regard to hybridisation, I feel perfectly satisfied that this must take place, for, from the utter failure of the several attempts I have made to fertilise some of those species which bear bisexual involucres with their own pollen, taken from various flowers upon the same individual, and also from the fact that in many species the individual plants are unisexual, it is evident that many, if not most, of the succulent species are dependent upon cross-fertilisation for their reproduction, and as I am aware that hybrid forms have been raised from seeds produced under cultivation, it is more than probable that similar hybrids occur in nature. Indeed, the intermediate character of certain species between two other distinct species seems to me to point very strongly to that conclusion. *N. E. Brown.*

FLOWERS IN THE SOUTH-WEST.

NOTES FROM SOUTH DEVON.

The greatest amount of frost registered last winter was 6°, and this only for one night. Tender things therefore practically escaped damage, though Solanum aviculare was slightly cut. Iris stylosa commenced flowering at the end of October, and produced many hundreds of blooms from that date to the middle of March, the last being cut on the 18th. The charming little Violet Cress, Ionopsidium acaule, was a beautiful sight through January, February, and March. It is excellent for carpeting spring beds, grows only 2 inches high, and, being surface rooting, does not rob the bulbs. When once established, it reproduces itself from self-sown seed. An interesting little shrub is Goodia lotifolia, from Australia. It bears about forty flower-racemes, very much like those of the Laburnum, but smaller, the blossoms being deep yellow, with a touch of maroon at the base of the petals. It commences to flower early in March, but is rarely seen in gardens. Another Australian shrub that flowered profusely was Candollea tetrandra. This, in the severe frost of February, 1912, was killed to the ground, and was thought to be dead, but early in June it shot up from the base, and is now a shrub over 3 feet in height and 2 feet 6 inches through. In April it produced blooms yellow in colour, and about an inch in diameter, in great abundance. Jasminum primulinum against a west wall was in March a sheet of yellow, and the Mexican Abelia floribunda, in spite of having flowered in October, was rosy-crimson with bloom. Sanguinaria canadensis, in damp, peaty soil, was pretty in March, when one of the loveliest sights in the garden was Corylopsis pauciflora, whose leafless branchlets were studded with innumerable, drooping, pale-yellow blossoms. Why the plant should be called pauciflora it is difficult to understand, as its flowers, instead of being few, are produced in abundance. Clematis indivisa lobata was beautiful at the end of March, being absolutely smothered in white flowers. It is one of the best open-air climbers in the south-west. Daphne Blagayana was a beautiful sight in March, a large plant having over fifty flower-clusters, and D. Cneorum produced its pink blossoms a month later. A fine bush of Edwardsia (Sophora) Macnabiana, 7 feet in height and 6 feet through, was entirely covered with yellow flowers, all of which were cut for indoor decoration. Watsonia coccinea perfected the first of its scarlet flower-spikes in the month of March, and produced them at intervals for fully three months, unlike W. Ardernei, which bears all its spikes simultaneously. Hermannia candicans was supposed to have been killed in the severe frost of 1912, and another plant was procured in its place, but in the early summer it shot up again, and is now a good specimen. Its name is not found in any dictionary, but as all the members of the family are natives of South Africa this species probably comes from that country. In March it commenced to expand its bright yellow flowers, and it continued in bloom for months. Callistemon salignus blossomed profusely, being covered with its scarlet bottle-brushes, but C. lanceolatus did not flower. The first shrub to flower in the year was Correa cardinalis, which, against a wall, was covered with scarlet flowers in January. Viola gracilis was a sheet of purple, and Perry's variety of Phlox canadensis bore soft lavender blossoms. The South American Drimys Winteri began to expand its blossoms at the end of February, but these were not at their best until the commencement of May, when great specimens 20 feet in height were veiled in their ivory-white blossom clusters. Towards the end of May Carpenteria californica created a pretty picture, with its clusters of large, white, golden-centred blossoms about 2 inches across. The leaves of this shrub are all dark green, and show no signs of the browning so often seen. A fine bush of the Canary Islands Echium callithyrsum, 5 feet 6 inches in height, bloomed magnificently. It is growing against a south wall, and, being a tender subject, was badly damaged by the hard frost in February, 1912, but recovered, and this year early in April bore over thirty large flower spikes about 2 feet in length, the blue blossoms with their central clusters of crimson stamens looking like shot silk. In a neighbouring garden a fine plant of Anopterus glandulosus was covered with branching racemes of large, white, bell-shaped flowers. It is almost impossible to procure this shrub now, and it is very rare in gardens. Olearia nitida flowered well early in May, and O. ramulosa bloomed in October, but died in March. This is the second plant that has been lost, and it seems generally to die after flowering. The Corsican Morisia hypogaea has increased enormously, either from seedlings or from offsets. Twelve plants were originally here, and they have multiplied to over sixty. Early in February they began their flower-display, and continued blooming until April, the bright golden-yellow blossoms produced in quantity having a very brilliant effect. Iris tingitana has been superb in some gardens in the south-west. In one in the neighbourhood of Kingsbridge over sixty splendid flower-spikes nearly 3 feet high were in full bloom in a bed. Iris sindjarensis flowered well in the early spring, and the purple I. setosa bloomed in April. Ourisia coccinea from the Andes of Chili, with the help of copious waterings, flowered well early in May, a patch 3 feet long and 2 feet wide bearing fifty flower-spikes. This plant requires abundant moisture, and a partially shaded site. A plant of Cypripedium pubescens bloomed finely, bearing over twenty flowers, and C. spectabile is flowering equally well. Six good plants of Saxifraga Burseriana Gloria growing on the top of a wall bore dozens of flowers, and Daphne indica alba bloomed about Christmastide. Aethionema pulchellum was a sheet of whitish-pink in May, but last year a fine plant of A. grandiflora died when in full flower. Deutzia kalmiaeflora, the loveliest of the whole family, was a beautiful sight in April. The rich rose-pink of the unopened buds contrasts pleasingly with the paler tint of the open blossoms, which bear a crown-like centre of stamens. At the end of May Veronica Hulkeana, against a south wall, was a picture, being entirely covered with long, branching flower-sprays of little lavender blossoms. A fine specimen over 7 feet in height died in the same position five years ago, and its successor will require some time to attain a similar size. V. anomala bore its small white blossoms and V. diosmifolia its lavender flowers. Tricuspidaria lanceolata was in full bloom at the end of May, and was very handsome with its drooping crimson flowers, but T. dependens flowers later. The lavender perennial Pea, Lathyrus pubescens, on a west wall, 8 feet high and 6 feet across, came into flower towards the end of April, and was a beautiful sight, with dozens of large flower-clusters. It has been in the same place unprotected for three years. A large plant of Solanum crispum, over 18 feet in height, flowered profusely, but has now been cut down in order to make it dwarfer. Gladiolus tristis concolor was very lovely early in April, a colony of over 200 bulbs making a splendid show, and their scent at night was delightful. This is a very rare plant, and nurserymen do not appear to stock it. Atragene alpina, climbing over rough poles, flowered well in April, but has died out in certain gardens. Clianthus puniceus was a sheet of scarlet in May, and the white variety, which is grown on the same wall, makes a pretty contrast. A group of Dictamnus Fraxinella albus was a handsome sight in May; Gerbera Jamesonii has never flowered so well before; the beautiful Chilian Calceolaria violacea, a bush 4 feet high and as much through, was charming in April; plants of the white-flowered New Zealand Linum monogynum were masses of bloom; the Australian Eriostemon neriifolium bore its pinkish-white blossoms in May; and Acacias armata and cordata flowered well. Osteomeles anthyllidifolia was covered with its white, Hawthorn-like blossoms, and early in May the tender Solanum aviculare bore the first of its deep violet golden-centred flowers, but the greatest attraction in the garden in that month was a plant of the Mexican Bouvardia triphylla that already carried over fifty brilliant scarlet flower-clusters, and has remained in full bloom ever since, thus flowering uninterruptedly for six months. It is quite the handsomest little shrub in the garden. *Wyndham Fitzherbert.*

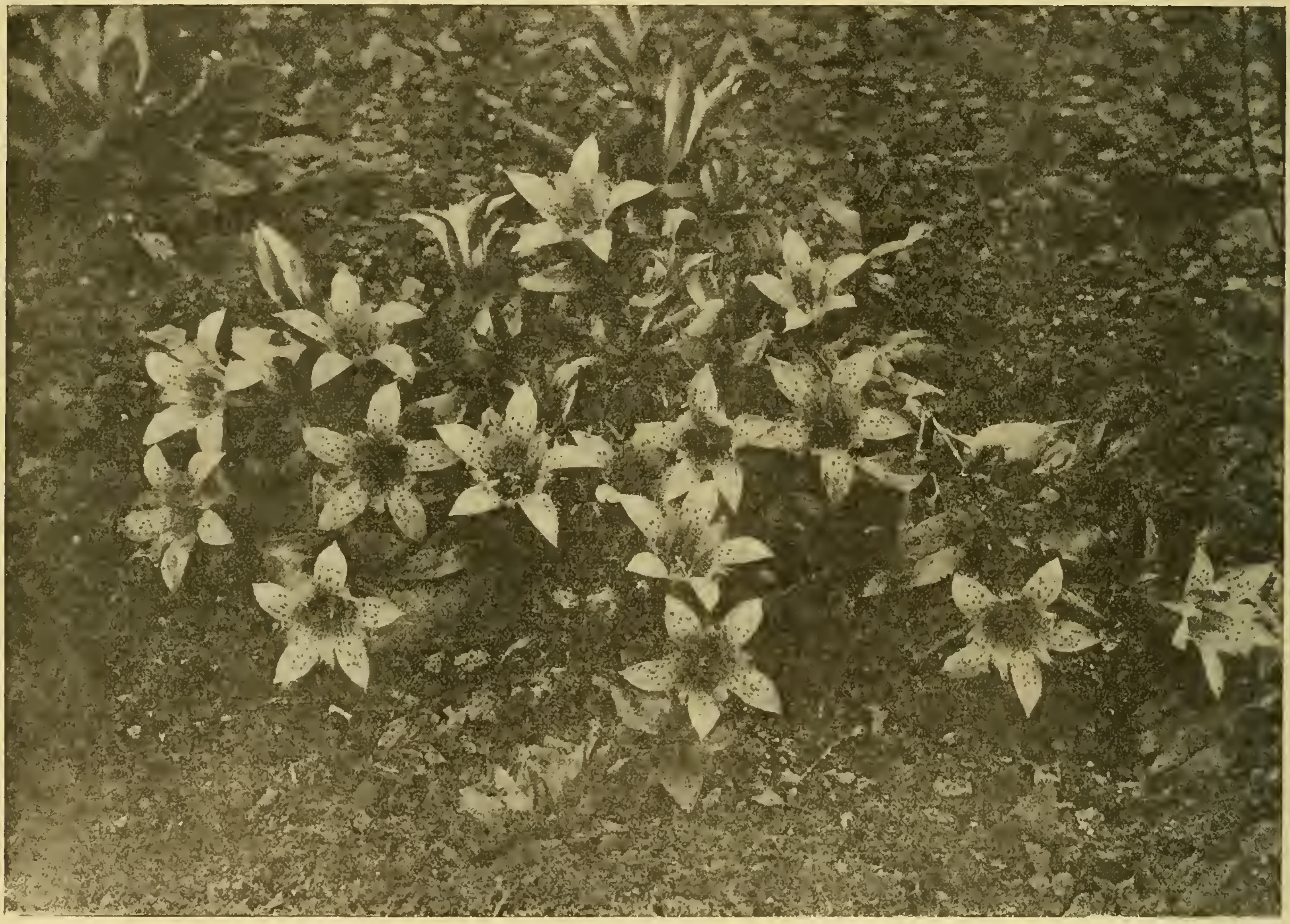


Fig. 92.—Gentiana septemfida var. lagodechiana: flowers, deep blue, spotted with green. [*Photograph by W. Irving.*

GENTIANA SEPTEMFIDA VAR. LAGODECHIANA.

This beautiful variety of the summer-flowering Gentiana septemfida (see fig. 92), is a recent introduction from the Eastern Caucasus, where it grows wild in moist, stony soil at an elevation of over 7,000 feet, near to the small town of Lagodechi, hence the varietal name. It is a perennial of prostrate habit, with ascending stems 6 inches to 8 inches long, each bearing from two to four flowers in the axils of the upper leaves. The flowers are solitary, and possess short pedicels, thus differing from the type G. septemfida, which bears the flowers more or less in a head at the top of the stems. The deep blue flowers, each about 1¾ inches across, have a paler throat with green spots, while there are also greenish-yellow spots on the limb of the corolla. The glossy green leaves are narrowly ovate and shortly stalked, whilst the stems as well as the outside of the flower tube are of a ruddy brown colour. The plant grows freely in well-drained, moist soils in a situation not too sunny. Seeds are produced with freedom. *W. I.*

THE BULB GARDEN.

LILIUM HENRYI, AT DUFFRYN, SOUTH WALES

This Chinese Lily, a member of the Archelirion group, is frequently called the orange-yellow speciosum, owing to its resemblance in bloom and habit to the speciosum family. The successful cultivation of Liliums, taking them collectively, presents very great difficulties if the bulbs are to increase in size and vigour instead of losing the strength they possess when imported. Of the many species tried in these gardens none has proved so successful as L. Henryi (see fig. 93). Most of the references to this Lily which have come before my notice record it as growing so high as 9 feet, with 20 or more flowers on a spike; but in these gardens stems measuring 11 to 12 feet are not unusual, with 40 to 50 flowers, and in one instance 56 blooms and buds were noted.

We have them growing in various positions, one in full sunshine—in fact, a particularly hot corner—and another where the plants are partially shaded from midday sun. Though all are doing well, the latter position is the home of the finest specimens. The border in which they are growing was made in the spring of 1910 with soil composed of three parts maiden loam and one part old border soil, with a liberal quantity of decayed cow manure added. The depth of soil is 2½ feet, and the particular spot where the Lilies are planted is on a rock foundation. This latter fact seems to point clearly to the value of perfect drainage. The bulbs were planted in May, 1911, after having been started in a frame.

Our method when dealing with a large number is to place squares of peat in a frame, some little distance apart, and large enough for the bulb to rest on, the whole being then covered to the top of the bulbs with loose peat. By this method the bulbs are kept under control, and there is no danger of their suffering from too much moisture before the roots become active. Plenty of air is admitted to the frame, and the lights are removed when growth commences. When the shoots are about a foot high the roots have penetrated well into the peat, and the plants are transferred with care to their flowering quarters.

In three years the bulbs of L. Henryi have more than trebled in size and number. It would, therefore, appear that success lies largely in making a good start with soil and position congenial to the bulbs. Next in importance is to see that the roots are kept moist and cool during summer. An occasional mulch with partly-decayed leaves and farmyard or pit manure will conduce to the latter conditions.

The flower-spikes of L. Henryi have a particularly graceful habit, and to retain this it is necessary when staking the plants to provide stakes about two-thirds their height, so as to allow of the plants being so tied that their pendant habit is preserved. Seeds set freely and can be sown as soon as ripe in sandy soil in a frame. The seedlings should be pricked out into a frame and transplanted, when large enough, to a prepared bed in partial shade. *Arthur J. Cobb, Duffryn Gardens, Cardiff.*

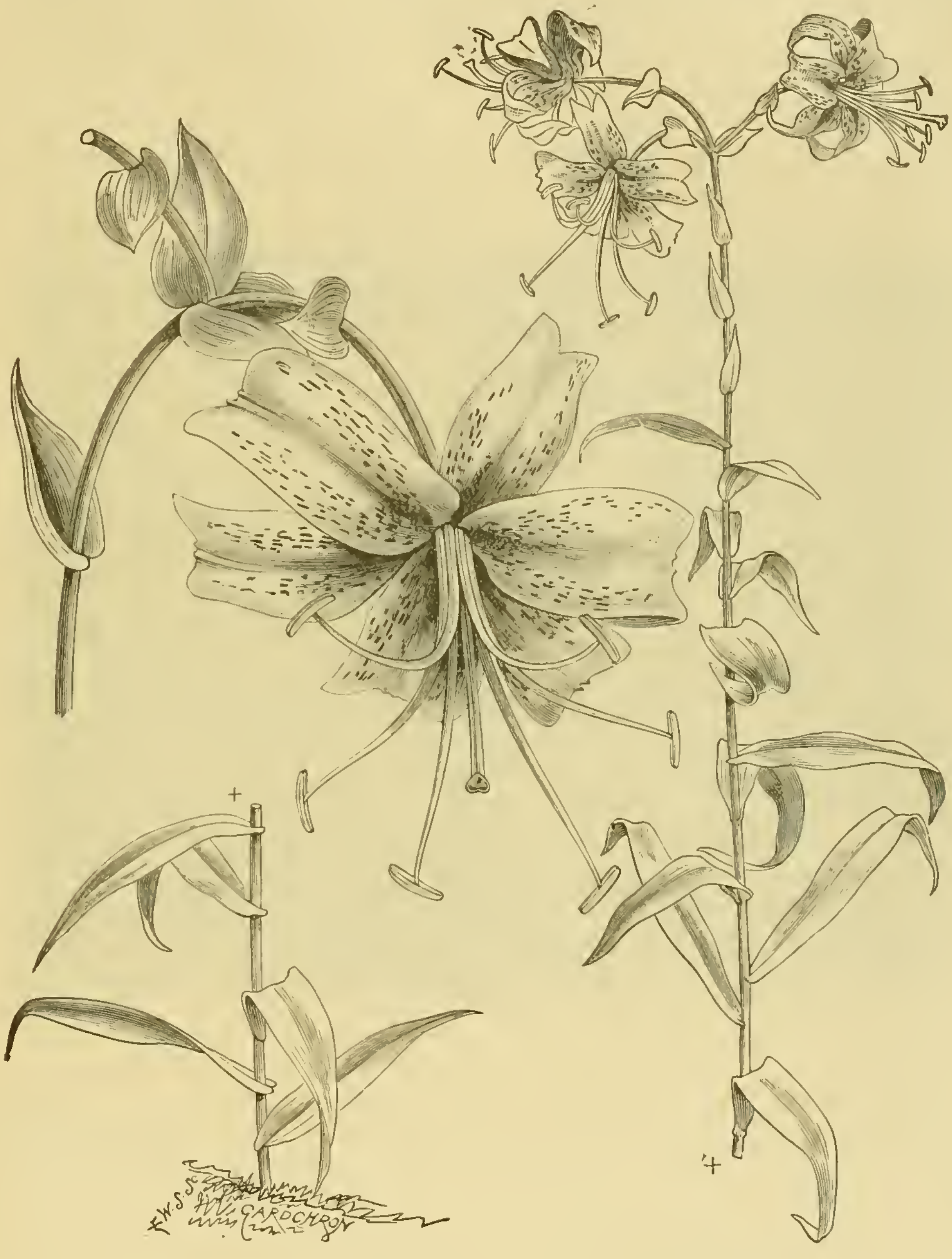


Fig. 93.—Lilium Henryi : flowers yellow, with red spots.

CROCUS VALLICOLA.

This, the earliest of the autumn-flowering species of Crocus, seldom offered by bulb dealers, is in the market. It is a pretty creamy-white-flowered species, unfortunately, rather fugitive in the duration of its flowers. Nor is it very hardy. It would be interesting to know how many can cultivate C. vallicola successfully in the open, with its foliage unprotected from the weather. The leaves are not produced until spring, but they are sometimes injured by late frosts. C. vallicola is a native of Armenia, Lazistan, and adjoining districts, where it occurs at a considerable elevation. Maw mentions and illustrates two varieties, C. lilacinus and C. Suwarowianus, the former being lined with lilac on the exterior of the segments, the latter differing little except in being later in flowering. *S. Arnott.*

STORAGE AND GRADING OF APPLES AND PEARS.

The following particulars are given in a leaflet just issued by the Board of Agriculture and Fisheries :—"It is believed that there is a very large number of gardens and small orchards in which Apple and Pear trees are to be found, the fruit of which is not put to its most profitable use by the owners. Much is wasted altogether, and more suffers in quality through the neglect of certain simple precautions. The requirements for the proper storage of Apples and Pears are not the same. Apples require to be kept in a cool and rather moist place, where there is enough ventilation to prevent saturation. Pears require warm, dry surroundings, but even under the most favourable conditions they will not keep long. A few days after Apples are put in store they begin to 'sweat,' and continue to do so for about three weeks. During this time there must be a free current of air round them which must not be too dry, or they will begin to shrivel. After the 'sweating' period is over this is not so important. Small growers who have only a few Apples to keep will find that a good method is to wait till 'sweating' is over and then pack them as closely as possible in a large earthenware jar. The jar should be covered with a piece of roofing slate or stone and stored in a cool shed. For larger growers a shed or storehouse is required if no cool cellar is available, and in preparing a store the following points should be remembered :—1. The fruit must be protected from frost, but subject to this precaution the temperature should be as low and equable as possible. A cave in a sand or chalk bank makes an excellent storehouse. 2. A moist atmosphere is necessary. The best kind of floor is the bare earth, which may be damped occasionally. 3. Ventilation to prevent stagnant and heated air is necessary, especially during the 'sweating' period. 4. Apples easily absorb flavours from their surroundings. They should not be put on new wooden shelves, or on straw or hay, nor should any strong-smelling vegetable or other material be kept in the same room. They should be placed on slate shelves or old, seasoned wood may be used. A useful Apple store may be made by digging a large trench about 10 feet wide and as long as is required. The depth should be about 2 feet. A wall one brick thick and about 4 feet high should then be built on either side, and the soil that has been dug out should be heaped up against the outside of the wall. A roof of rough rafters thickly covered with thatch should be built over the top, and shelves can then be fitted inside on which the Apples may be heaped. There should be a door at each end so arranged as to admit air and exclude light. Apples should never be stored in an attic or top room of a house. If the fruit is to be consumed by the grower, there is no advantage in selecting the fruit beyond the fact that it is better to eat the riper specimens first. If the fruit is to be sold it is very important that all the Apples or Pears offered for sale should be of similar size and quality. The practice of 'topping' the consignment with a better class of fruit cannot be too severely condemned. The following recommendations are offered for the guidance of growers who consign their fruit to market :—1. Apples and Pears should be packed in boxes of uniform size and should contain as far as possible the same number of fruit. It is more important, however, that the net weight of the consignment should be the same than that the number should be constant. A convenient size for the boxes is 20 inches long, 10 inches deep and 11 inches broad—all inside measurement. These boxes will hold about 40lb. They can be obtained from box-making firms. 2. The approximate weight should be put on the outside of the box as an indication to the seller of its contents. 3. The name of the consignor, or some mark by which the salesman can identify him, should be put on the box. Fruit thus consigned should secure a more ready sale than fruit badly and irregularly packed, and will lead to better prices and further orders. Small growers are strongly advised to satisfy the local demand for fruit before consigning to large markets, as the risk of a glut and consequent unremunerative prices is thereby avoided."

The Week's Work.

PLANTS UNDER GLASS.

By C. H. COOK, Gardener to the Earl of DERBY, Knowsley Hall, Lancashire.

GLORIOSA SUPERBA.—Most of the plants have finished flowering, and water should be withheld from the roots gradually until the foliage dies down. At that stage they may be stored in a dry place with Caladiums, Achimenes, Gloxinias, and plants of a similar nature.

CYCLAMEN.—The first batch of Cyclamen may be housed in a greenhouse having a temperature of 50° to 55° at night. Stir the surface soil and sprinkle over it a little Ichthemic guano. Wash the pots and place them on a stage close to the roof-glass. Promote atmospheric moisture by spraying the plants and damping the paths and the spaces between the pots. If thrips or red spider attack the plants fumigate the house with nicotine.

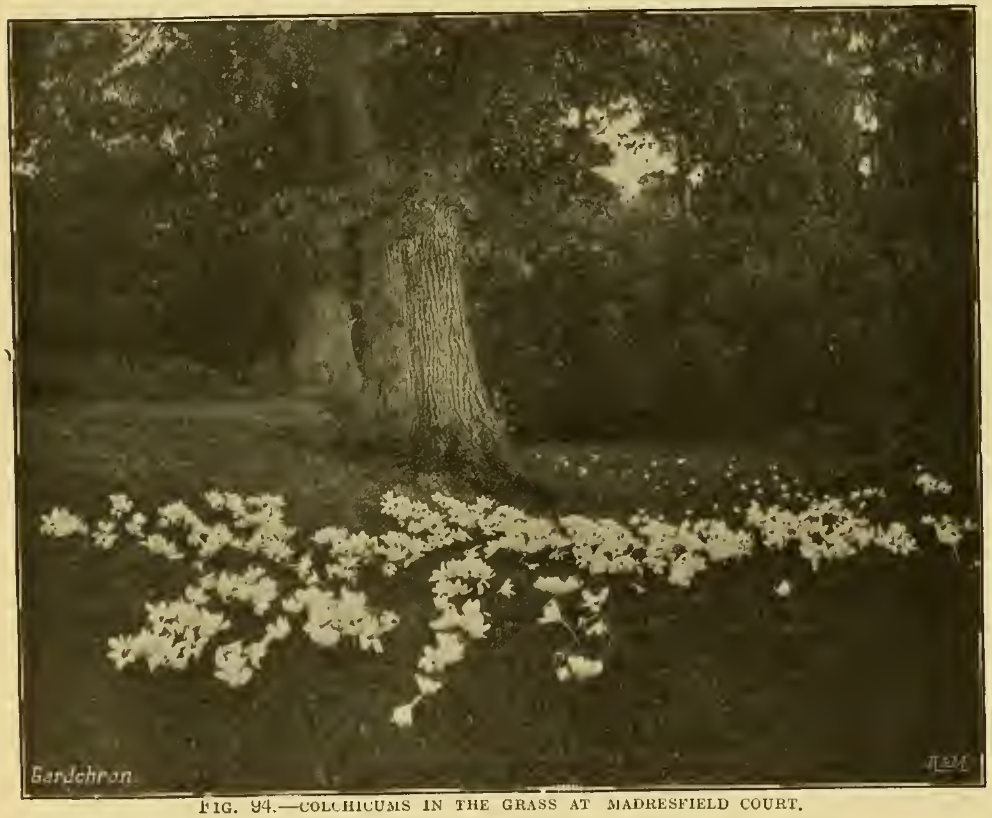


FIG. 94.—COLCHICUMS IN THE GRASS AT MADRESFIELD COURT.
(See "The Week's Work: The Flower Garden.")

CHRYSANTHEMUMS.—The flower buds are swelling, and early varieties should be housed before they begin to damp. Admit plenty of fresh air to the houses, and be careful not to allow the plants to suffer from want of water.

CAMPANULA PYRAMIDALIS.—Plants raised from seed this year must be kept growing as long as possible. The best plants may be shifted into seven or eight-inch pots, and the soil made firm. Stand the plants in a cold frame, and admit an abundance of air, removing the lights in favourable weather and replacing them only when it is very wet. Last season's plants that have not flowered should be shifted into slightly larger pots and treated as advised for the others, but the roots should be kept rather dry during the winter months and the plants afforded a little protection.

SHADING AND SUNBLINDS.—All shading materials may be removed from most of the houses and a record made of the requirements of blinds for another year. Before storing the old blinds let them be dried thoroughly, and labelled, for this will save time next spring. Shading applied to the glass with a brush may be washed off on a dull, showery day with a little soft soap or soda in warm water.

FRUITS UNDER GLASS.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

FIGS.—With the exception of those on the latest trees, most of the fruits have been gathered, and the earliest opportunity should be taken thoroughly to cleanse the foliage by means of the syringe or garden engine. The long period of hot, dry weather, coupled with a less frequent use of the syringe, has, in many cases, where the trees have been carrying ripe fruit, favoured the increase of red spider and other insect pests, and measures must be taken at once to destroy the pests. Ventilate the house freely both night and day, to favour the ripening of the wood. Pot trees that were forced early and subsequently plunged out-of-doors, may remain undisturbed for another month, by which time the leaves will either have changed colour or dropped. Should any of the plants require potting, the work may be done at once, but care should be taken not to overpot them, or they will make rank growth next season. Make the soil firm, using a compost consisting of three parts good fibrous loam, and one part dried cow manure, passed through a fine-meshed sieve. Add a sprinkling of bone meal and a small quantity of old mortar, or lime rubble.

STRAWBERRIES IN POTS.—Water the roots of pot Strawberries with extra care, applying neither too much nor too little. When water is afforded, let the soil be moistened thoroughly. Remove the pots occasionally, to prevent the roots from penetrating into the layer of ashes or gravel on which they stand. Remove all runners and weeds as they appear. Less syringing overhead is necessary as the nights lengthen and become cooler, but every precaution must be taken to prevent the plants from being attacked by red spider or other insect pests. The occasional use of clear lime water will destroy any earth-worms that may be present in the soil, and prevent these creatures from entering the drainage hole.

PEACHES AND NECTARINES.—The shoots of the earliest trees, whether planted in pots or borders, should, by this time, be well ripened. In some instances the trees are already losing some of their leaves, in which case syringing may be partly or entirely discontinued. Later houses from which the crop has been gathered should be ventilated freely, both night and day, and the trees relieved of all old or useless wood. The season has, on the whole, been favourable for the ripening of the wood, which has matured much earlier than usual. Hence—except in isolated cases—little, if any, fire heat will be necessary at this stage.

CUCUMBERS.—Plants in pits are doing exceptionally well this season, the growths being healthy, firm, and strong. Little difficulty should, therefore, be experienced in keeping the plants in a condition of fruiting well into the winter months, provided a suitable temperature can be maintained as the days shorten. Extra nourishment may be afforded the plants occasionally in the shape of top dressings of loam, well decayed manure, and bone meal. This is better than frequent application of manure water, which may cause the soil to become sour.

THE FLOWER GARDEN.

By W. CRUMP, Gardener to Earl BEAUCHAMP, K.C.M.G., Madresfield Court, Worcestershire.

COLCHICUM.—C. speciosum maximum, planted in the grass of the pleasure grounds, has no equal for beauty at this time of year. The stock may be increased by taking up the bulbs as soon as they pass out of flower, grading them and replanting at once in the grass, or the work of replanting may be reserved until after the leaves are over in July.

TUBEROUS-ROOTED BEGONIAS.—The best variety for effective summer bedding known to me is the true scarlet, erect flowering variety, "Worthiana," a Continental variety, very difficult to obtain true. Healthy shoots suitable for cuttings always spring from the base of the plants after the first flush of bloom. These should now be inserted three in each 60-sized pot. Make absolutely certain that the cuttings are not cut to what was a flowering joint, for although roots will form and little bulbs develop at the base, such plants will not start into growth in spring like those taken from a non-flowering joint. Insert them in fine, sandy soil, give one watering, then place them in a warm house where every cutting should strike and form a bulb before the foliage dies. The plants should be rested until the spring. One point essential to success is to avoid an excessively moist atmosphere, which would cause damping.

MONTBRETIA AND ANTHOLYZA.—Both these bulbous plants have done splendidly this season and are in every way worthy of special attention in the bulb garden. Antholyza paniculata grown on the margins of water is especially pleasing in autumn, the foliage resembling giant reeds, and the long panicles of bright orange-scarlet flowers are very beautiful. Montbretias Prometheus, Star of the East, and other newer varieties raised by Mr. Davidson should find a place in every well-appointed garden, but the claims of the old variety Crocosmaeflora cannot be overlooked, for the spikes have a special decorative value when cut.

MARGUERITE MRS. F. SANDER.—This variety of Marguerite is an acquisition to the list of white-flowered bedding plants. Cuttings of firm texture and free from insect pests should be inserted now in a cold frame and treated similarly to Calceolarias. They need only be kept free from frost. This Marguerite associated with Salvia patens in large groups gives a charming colour combination. Another good effect may be obtained by planting M. Mrs. Sander, Calceolaria amplexicaulis, and the Salvia named. It is time now to prepare a rough working sketch plan for next season's bedding, with all details filled in.

PRUNING EVERGREEN SHRUBS.—It is not too late to remove some of the longer shoots of evergreen shrubs, but the work must be done judiciously; cut them close to their seat of origin. The smaller growths may be pruned next year. This treatment will result in the development of fresh shoots in spring, thus keeping the lower parts of the plant well furnished with growth, and the plants small and compact. It is astonishing how badly pruned are the trees and shrubs in many public parks and gardens of provincial towns. One frequently sees bushes of Privet, Laurel, Box, and Yew clipped into irregular or globular-shaped specimens, every bit of new growth sheared off, and the shrub bare and devoid of foliage, thus defeating the very object for which it was planted.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

The Fruit-Room.—In storing fruit, the greatest cleanliness should be observed. The room, therefore, should be washed thoroughly early in the autumn, and well ventilated, till required for use. The walls and the ceilings should be limewashed, and the woodwork scrubbed clean. Maintain a uniformly low temperature whenever possible, and avoid extreme dryness. The greatest care should be taken that straw or other material on which the fruit is placed should be perfectly sweet. I prefer to spread clean white paper on the boards, for this can be readily removed and replaced if stained. Hay or straw is apt to become musty from the moisture given off by the fruit, causing the fruit to become tainted.

Raspberries.—If the work has not been done cut out all the old fruiting canes at once. Where the Raspberry thrives and grows freely the plants usually send up far too many suckers to furnish the space, and the weaker ones should be dispensed with after the old canes are removed. Overcrowding prevents the sunshine from reaching the shoots to ripen them, with the result that in very cold winters many sappy canes are killed. Collect and burn the old canes together with other rubbish, and hoe the soil lightly between the stools to destroy seedling weeds, but do not dig the ground deeply, as the Raspberry roots are very close to the surface.

Autumn-fruiting Raspberries.—The exceptionally dry summer has not suited autumn-fruiting Raspberries, for although there is a fair amount of fruit the berries are neither so large nor so plentiful as last season. During times of prolonged drought birds and wasps are very troublesome to such crops as Raspberries, and it is worth the trouble to net the plants.

Mulberries.—The Mulberry seems to have revived some of its old popularity, and sometimes finds favour as a dessert fruit or for use in the kitchen. The trees are usually planted on lawns or in grass orchards; in such cases it is best to allow the fruits to ripen sufficiently to fall when the tree is shaken gently. Fruits that are fully ripe and nearly black are the best flavoured.

Strawberries.—Runners intended for fruiting next season have already been planted for two months, having been set out as soon as they were available. They are becoming well established, and all runners should be pinched off as they appear. Keep the hoe at work regularly amongst the plants, which may be expected to furnish the earliest berries out-of-doors next season. It frequently happens that ground is not available for planting Strawberries early in the season. Where delay has been occasioned from this cause set the plants out now in land that has been cleared of Potatos and other crops. The ground is still warm, and the roots will get a good start before the advent of winter. But this late planting cannot be expected to give such good results next season as the earlier planting. However, they will furnish a plentiful supply of early runners, which will prove valuable where a number of plants is required for forcing. This is a great advantage, and for this reason the ground should be well prepared, and some rich soil placed round the roots when planting, in order to favour early and healthy growth next spring. The beds of old plants that are to be retained for another year should be made clear of weeds and rubbish, and if all the runners required have been obtained, hoe at regular intervals to keep down seedling weeds. Plants of Royal Sovereign which were forced last spring, and subsequently planted out in good time after careful hardening, will, in normal seasons, often furnish a few dishes of choice fruit. But the conditions this season have been entirely against a free growth, and the plants have remained practically dormant, even when the roots have been watered repeatedly. Remove all runners as they appear, so that all the energies of the plant may be directed into building up strong crowns for next season.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Permanent Shading.—The recent rains will have removed the greater part of the permanent shading from the roofs of the glass-houses. That which remains should be washed off, for the plants will now need all the light. The roof blinds, and especially in gardens in the south, will be required during the hottest part of the day for some time to come. Much discretion is necessary in their use; they need only be drawn down when there is a possibility of the foliage scorching. The Mexican Laelias, which are producing their flower-scapes, require all the available light, and the house should be ventilated freely during the middle of the day, but the ventilators should be closed early in the afternoon to make the fullest use of the sun's heat. The roof-blinds of houses facing north, in which Odontoglossums, Masdevallias, and other cool-house Orchids are often accommodated, may be removed altogether. If there is no accommodation for storing the blinds on the rollers, they should be detached when perfectly dry, rolled up, and stored in a dry place. Wash the outside of the roof-glass clean as soon as the blinds are dispensed with.

Damping and Syringing.—The amount of moisture in the atmosphere in the different divisions must be regulated with extreme care; no hard-and-fast rules can be laid down, for the conditions under which the plants are cultivated make all the difference. For instance, many places in the North of England and Scotland are so very wet that very little damping of the floors and other bare spaces is necessary. Other parts are drier, and lean-to houses facing south may become very dry, especially if there are no blinds to permit of shading. But one general rule may be followed in autumn—that is, never damp down until the normal temperature of the house is reached, and damp or syringe sufficiently early in the day for the moisture to become evaporated before the evening.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Globe Artichokes.—The spring - planted batch of this popular vegetable is producing an abundance of fine heads, with the promise of a succession until the end of the growing season This is a suitable time to slip off suckers from old-established plants to lay in for planting next spring. These do very well with the root end laid in cinder ashes and placed where they can be easily protected during periods of frost. A system of annual planting allows one to root up the older plants when these begin to show symptoms of weakness, and should a severe winter destroy established plants, it is a satisfaction to know there is another crop to follow.

Cauliflowers.—A method that can be well recommended for wintering seedling plants is to sow now or shortly in a cold frame on a shallow bed of soil. The frame, to be successful, must stand on a dry site, both because the plants withstand severe frost better and because there is a freedom from the algal growth that spreads over the surface soil when the frame is placed in other than a dry position. Early London has for long been the variety selected for this sowing, though personally I prefer one of the dwarf, early varieties.

Tomatos.—The fruits of the latest batch of Tomatos in cold pits are just beginning to colour, and by keeping the structure close it will be possible to ripen most of the fruits by November. The plants should be kept quite dry. It is, however, preferable to use a little fire-heat when the boiler is in use for other houses, because the heat not only hastens the maturity of the berries but improves the flavour considerably. Without artificial heat the fruit is really of use only as a vegetable. Small late-set fruit should be removed, and every portion of new growth also. A goodly amount of the old foliage may also be dispensed with, and in a well-heated structure, which will furnish a supply of fruit well through winter, most of the leaves may be removed in order to allow light to reach plants underneath.

French Beans.—A beginning should be made for the production of pods during the winter. Pine pits afford an excellent means of forcing, if shelves near the glass roof are set apart on which to place the pots. Experience proves that pots 7 inches in diameter are the most suitable, and turfy loam enriched with well-decayed manure forms a suitable compost, the latter in the proportion of one part to three of the former. If the soil is very poor add some dried cow manure rubbed through a ½ inch sieve, and a 6 inch potful of a vine or vegetable manure. Some cultivators only partly fill the pots with soil at first, adding fresh compost later, but this is not necessary, as the plants can be fed artificially as required, and they are not expected to continue a long time in bearing. Several seeds should be sown in each pot close to the edge. The main difficulty is to keep the foliage free from insects. Constant syringing is not sufficient unless the general treatment is good. Careless applications of water are disastrous.

Cabbages.—The earliest planted batch is now ready to have the soil drawn up to them. Growth has been rapid, and in light soil it is well to press the soil with the foot to prevent extra sappiness. Should January be severely cold they will be all the more able to survive unscathed. Later planted material has, owing to the drought, made comparatively little progress, but there are still six weeks in which to make up lost ground.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Nursery Beds.—The ground allotted to the winter quarters of Lettuce seedlings should now be prepared by heavy manuring and deep digging. The plot may then be divided into beds each 4 feet 6 inches wide, allowing a path of 14 to 16 inches in width. The soil should be broken up and raked level. As a preventive of mildew soluble powdered sulphate of copper can be spread over the ground at the rate of half a pound to every bed of 65 feet in length. During bright weather a top-dressing of black soil, previously broken up and passed through a half-inch screen, should be spread over each bed. The surface of each bed can then be levelled and pressed down, after which the cloches will be placed in position, three rows to every bed. A small bed can be made, as directed above, in a sheltered position, for the insertion of the seeds which are sown from October 5 to 18. Cabbage Lettuce Little Gott, Cos Lettuce Green and Paris White, also Cabbage Lettuce White Passion, can be sown in the order named at intervals of two days. Frames may be prepared by filling with black soil to within 3 inches from the top for pricking out Cauliflowers for early cultivation, either on hot beds or in cold frames. Seeds of varieties such as Snowball and Erfurt should be inserted without delay in one of these frames. Seeds of Cauliflower for planting outside in the spring should only be sown on or about October 8, as plants from an earlier sowing are liable to get too strong previous to the final planting late in March.

Melon Beds.—Where Cauliflowers have not been used as a "catch" crop it will be advisable to clear these beds as follows:—All the rubbish to be raked away and the manure from the first trench put on the black soil heap. The path between the first and second bed with the soil from the top of the manure of the next trench should be thrown in the first trench. The manure from the second bed is then placed in a ridge on the top of the soil just levelled on the first bed. In continuing the work only one ridge of manure out of every three or four should be retained, the rest being carted away. When all the Melon beds have been gone through the ridges of manure should be spread and dug in.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCTOBER 6—
R.H.S. Committees meet as announced; no exhibition.

WEDNESDAY, OCTOBER 7—
National Chrysanthemum Soc. Floral Committee meet at Essex Hall.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 52.2°.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, September 30 (6 p.m.): 57°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, October 1 (10 a.m.): Bar. 29.8; Temp. 55.5°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.
Nursery Stock, at Coombe Wood Nursery, Kingston Hill, by order of Messrs. J. Veitch and Sons, Ltd., by Protheroe and Morris, at 12.

MONDAY AND WEDNESDAY—
Dutch Bulbs, Liliums, Palms and Azaleas, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30 p.m.

WEDNESDAY—
Trade sale of Liliums, Palms, Bulbs, etc., at Protheroe and Morris's rooms, at 3.

FRIDAY—
Orchids, at Protheroe and Morris's rooms.

Botany at the British Association. The Presidential Address of the Botanical Section was delivered by Professor Bower. In the course of his introductory remarks Professor Bower observed that few, if any, of the large areas of the earth's surface have developed their coat of vegetation under such interesting conditions as has that which bears the Australasian flora. In its comparative isolation and in its freedom from the disturbing influence of man it may be held to be unique. Unusually free from the incursion of competitive foreign types, its flora has been shaped and determined through long ages in the main by climatic influences. The first serious botanical investigation of the continent was made during Captain Cook's expedition in 1770. With Captain Cook in the *Endeavour* was Joseph Banks, whom Dr. Maiden has described as the "Father of Australia." At his own expense Banks furnished the scientific staff of nine persons and provided all the scientific stores for the expedition. The story of the *Endeavour* is told in Cook's Voyages, and the scientific part is based in large measure on information supplied by Banks. Banks' own journal only saw the light 125 years after the expedition. His papers by a lucky chance came into the hands of Joseph Dalton Hooker, who as a youth helped to transcribe them, and was doubtless stimulated by their perusal to emulate the voyages of Banks.

Ultimately Sir Joseph Hooker—in 1896—edited Banks' journal. Some 1,000 specimens were collected by Banks, and these passed at his death to the British Museum.

Another notable botanist who visited and explored Australia was Robert Brown, who accompanied Flinders in 1801-5. Of this voyage Hooker says that "as far as botany is concerned it is the most important in its results ever undertaken. On his own collections, and on those of Banks and others Robert Brown based his *Prodromus Florae Novae Hollandiae*, which Hooker describes as "though a fragment . . . . the greatest botanical work that has ever appeared."

The work of botanical exploration in Australia was continued by Ross, who in the voyage of the *Erebus* and *Terror* was accompanied by Joseph Hooker. The wide voyaging of these ships gave Hooker occasion to collect and observe the vegetation on all the great circumpolar areas of the Southern Hemisphere. The results of his observations were published in Hooker's great work, *The Antarctic Flora*. In it 3,000 species are described, and all the known facts incorporated, so that the volumes comprising this work constitute so many complete floras of the several countries. In the last volume, *The Flora Tasmaniae*, the introductory essay treats in brilliant and solid manner of the Australian flora as a whole. The essay discusses such great questions as the mutability and origin of species, and appearing within twelve months of the pronouncement of Darwin and Wallace on the "Origin of Species," Hooker's published belief in the mutability of species lent powerful support to the views put forward by Darwin and Wallace. Of this famous essay Darwin wrote that in his judgment it is "by far the grandest and most interesting essay on subjects of the nature discussed that I have ever read."

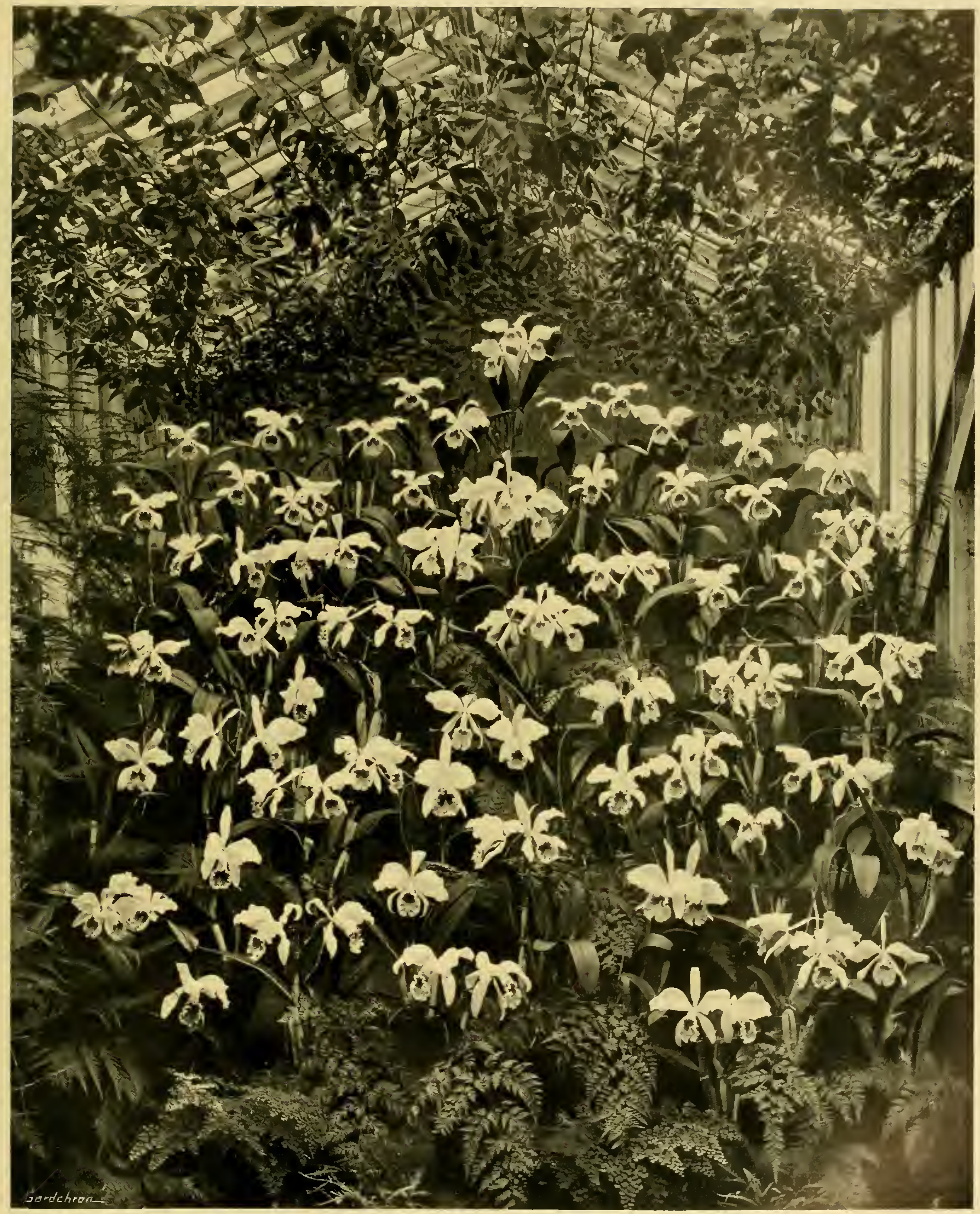
Hooker's analysis demonstrated that, like those of the Arctic regions, the Antarctic flora is very uniform. The same species in many cases occur in every island, though thousands of miles of ocean intervene. Many of these species reappear in the mountains of S. Chili, Australia, Tasmania, and New Zealand. On the other hand, the Southern temperate floras of S. America, S. Africa, Australia, and New Zealand differ more among themselves than do the floras of Europe, N. Asia, and N. America.

To explain these facts, Hooker suggested that during a former warmer period a centre of origin of new species existed in the Southern Ocean in the form of either a continent or archipelago, and from this centre the present Antarctic flora radiated.

The last of the classics on the Australian flora is the *Flora Australiensis*, by Bentham and Baron Ferdinand von Müller.

Our Supplementary Illustration.—In the Supplementary Illustration is depicted a group of white forms of Cattleya Mossiae in the collection of J. LEEMANN, Esq., Heaton Mersey (gr. Mr. S. SMITH). Mr. LEEMANN has been engaged in collecting and propagating white forms of Cattleya for some years past, and the specimens depicted represent scarcely one-fourth of those he has been able to secure. Nevertheless, the plate represents six different forms of Cattleya Mossiae Wageneri, all of them pure white except for the yellow markings on the disc of the lip; also a number of varieties of C. M. Reineckiana, with pure white sepals and petals, but with the labellums of various tints of crimson and purple; and several forms intermediate between the two leading types mentioned. There is a plant of the albino hybrid C. Queen Mary, and another of C. Myra Peeters. These white forms of C. Mossiae are amongst the oldest of the garden Cattleyas, for the first pure white variety was discovered at Caracas by WAGENER, 1851. REICHENBACH gave it specific rank and recorded it in *Bonplandia*, 2, page 21, as C. Wageneri. This name it bore in gardens for many years, and it appears not to have been recorded as a variety of C. Mossiae until 1883 (O'BRIEN in *Gardeners' Chronicle*, 1883, Vol. 20, 372). C. M. Reineckiana is an equally old form or variety, and was known for many years as "Sion House." Later it came more fully into notice when Lord LONDESBOROUGH showed it as C. M. Reineckiana at the R.H.S. meeting, May 17, 1871, where it obtained a First-class Certificate. When it is remembered that in earlier days it was thought a noteworthy fact that one or two white Cattleyas should be found in any one collection, and also that C. Mossiae itself was considered a difficult plant to grow successfully, it says much for modern Orchid culture that such a collection as Mr. LEEMANN possesses should be possible. There is just one detail in modern practice that may have something to do with the differences in the results now obtained, for it was formerly the custom to cultivate a plant continually as a single specimen until sooner or later it collapsed. Now, however, large specimens are divided, the stock is increased, and the isolated divisions grow with greater vigour.

Germans Visit a French Nursery.—Having obtained the Censor's permission for publication, we give the following extracts from a letter received from Monsieur HENRI GRAIRE, St. Fuscien, near Amiens, France, dated September 24, 1914:—"Up to the present my greenhouses are intact. The Germans passed through St. Fuscien, and neither entered my greenhouses nor my living house, they were satisfied to take all the fruit and vegetables out of the garden—no great matter. Shall I be as lucky till the end? I trust to see no more of them; nevertheless, we hear ceaselessly the boom of the cannon in the neighbourhood. Amiens was occupied for eight days; it was sad; but the Allies returned, and we have now over 100,000 men near us. I trust that we shall succeed in smashing Prussian militarism, but it will be hard. Our troops are in no respect inferior to the enemy. The English are admirable with their cool courage (*sang-froid*), and no soldiers are their superiors. Our regiments of the line are also very fine, and our artillery marvellous. It is said that at the beginning we did not have enough machine guns, but we have been bringing up a lot, and you (England) have sent us a great number. How far off seems the Entente Cordiale! It is now a stronger and firmer alliance than any that ever existed. It is civilisation against barbarism. Could one anticipate the destruction of Rheims Cathedral! My son has gone off as a young soldier, to be trained in the west of France, and I am left alone." Monsieur GRAIRE will be well known to our readers as a frequent visitor at the R.H.S. shows, and on these occasions he usually brings new and rare Orchids from the St. Fuscien nursery.



WHITE VARIETIES OF CATTLEYA MOSSIAE IN MR. LEEMANN'S COLLECTION, WEST BANK HOUSE, HEATON MERSEY.

Printed by Love & Malcomson, Ltd., London, W.C.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Begonia Altrincham Pink.

R.H.S. Meetings.—We have received from the Royal Horticultural Society an intimation that the pressure of recruits upon the War Office at the present time necessitates that the hall of the society be placed unreservedly at the disposal of the Government for drilling and billeting during the present month. The Society has found it impossible to secure other suitable accommodation for the fortnightly exhibitions of flowers, fruit, vegetables, etc., and the Council has therefore decided to abandon these exhibitions for the present. Fellows of the Society are requested, on reading this intimation, to make it as widely known as possible. When it is found possible to recommence the shows notices to that effect will appear in the Press. The Orchid, Fruit, Vegetable, and Floral Committees will continue to meet fortnightly on the specified dates to consider plants, etc., for certificate. The other committees, including the Scientific Committee, will also continue to meet.

Another Show Cancelled.—The Chester Paxton Society's annual exhibition, which was to have been held in the Town Hall, Chester, in November, has been cancelled.

Appointments.—The following appointments have been made by the Secretary of State for the Colonies, on the recommendation of Kew:—Mr. A. Wainwright, of Queens' College, Cambridge, and Mr. J. E. T. Hartley, of Magdalene College, Cambridge, as Assistant Superintendents of Agriculture in Nigeria; Mr. C. H. Oldham, lately a member of the gardening staff of the Royal Botanic Gardens, as a Sub-Inspector for the purposes of the Destructive Insects and Pests Act under the Board of Agriculture and Fisheries; Mr. W. N. C. Belgrave, B.A., of St. John's College, Cambridge, as Assistant Mycologist in the Department of Agriculture, Federated Malay States.

Technical Instruction for Small-holders.—The Board of Agriculture has addressed a circular letter to the local Education Authorities recommending that further provision be made for giving instruction and advice to small-holders and to allotment holders. In the course of its letter the Board observes that out of a total of 435,700 holdings of above one acre in England and Wales, 292,400 are under 50 acres, and that there are, in addition, over 118,000 allotments of under one acre belonging to local authorities apart from large numbers of allotments let by private landowners. In order to give effect to its advice the Board recommends the appointment of special officers, whose duty should be mainly the instruction of those in possession of small holdings and allotments.

Wart Disease of Potatos.—The following communication has been received from Professor Jakob Eriksson, Director of the Central Botanic Experimental Station, Stockholm:—"During the past year (1913) I made a successful experiment in killing the contagious matter in soil infected with Wart Disease of Potatos, which I wish to bring to the notice of Potato growers, especially in England. The trial was made on three small plots in the Experimental Garden of the Station at Stockholm, one plot being one square metre and the two others .3 square metre in size. The soil of each plot was isolated from the surrounding land by casings of zinc or cement, extending one metre below the surface of the ground. In the month of February of last year, during a period of open weather, diseased Potatos, cut into small pieces, were mixed freely in the soil of the three plots. After some weeks the soil in the two smaller plots (.3 square metres) was watered with a solution of commercial formalin and water (1 in 100), ten litres of the solution being applied per square metre. The larger plot was not treated. The work was completed about two weeks before the tubers were planted, which was in the middle of May. In one of the smaller plots two tubers of Magnum Bonum were planted, and in the other two tubers of Up-to-Date; in the larger plot five tubers of Up-to-Date. All the tubers were perfectly free from disease. During the summer and autumn the plants grew vigorously and apparently quite naturally. The crop was lifted on September 8, and gave the following results:—

A.—Plots treated with Formalin.

(1) Magnum Bonum.
Plant 1—9 tubers; weight 760 gr.; clean.
,, 2—4 tubers; weight 50 gr.; clean.
(2) Up-to-Date.
Plant 1—8 tubers; weight 700 gr.; clean.
,, 2—9 tubers; weight 318 gr.; clean.

B.—Control Plot—untreated.

	Tubers infected.		Tubers clean.	
Plant.	No.	Weight in gr.	No.	Weight in gr.
1	7	565	5	350
2	5	525	3	150
3	4	360	3	290
4	7	405	2	46
5	6	695	1	157
	29		14	

The disease on the infected tubers was, it is true, small in amount, but was undoubtedly present. The slightness of the attack may probably be attributed in some degree to the fact that the infection took place as late as February instead of in the preceding autumn. It may be the case that the infective matter had not permeated the soil sufficiently in the three months (from February to May). However, it seems evident from this experiment that a dilute solution of formalin, 1 in 100, is capable of killing the infective matter in soil contaminated with Wart Disease of Potatos. I hope that experiments will be made in England with this remedy. In very badly infected soil it would be better to make trials also with 2 and 3 per cent. solutions. If the remedy is really as good as it seems it will be possible to eradicate the disease in all gardens where it is now destructive."

The Genus Eucalyptus.—Parts XX. and XXI. of Maiden's *Critical Revision of the Genus Eucalyptus*, plates 85-92, deal with species Nos. 106-116, namely Eucalyptus gigantea, E. longifolia, E. diversicolor, E. Guilfoylei (Maiden), E. patens, E. Todtiana, E. micranthera, E. cinerea, E. pulverulenta, E. cosmophylla, and E. gomphocephala. Among points of special interest in the text is the unravelling of the confusion of E. gigantea with E. obliqua. E. gigantea inhabits high levels in Tasmania, Victoria, and Southern New South Wales, from 2,000 to 5,000 feet, and in certain localities attains a height of 150 to 200 feet; but there are many other species to which the specific name would more aptly apply. E. diversicolor, the "Karri," is one of the largest and most useful of the West Australian species, next perhaps to the "Jarrah," E. marginata, and has long been cultivated in the Mediterranean countries, usually under the name of E. colossea. Referring to the recorded heights of this species (up to 440 feet), Mr. Maiden discredits them. From personal observation he states that the Karri attains a huge size, and individual trees are stupendous, but he had no means of correct measurement and would not venture to quote their size in figures. The timbers of the Karri and Yarrah are very similar as sawn stuff, but the Karri burns to a white ash, while Jarrah leaves a black charcoal, so the author informs us. E. Guilfoylei is a new species differing from E. diversicolor in having a fibrous, not smooth, bark and pale, easily splitting wood. The complicated and confused synonymy of E. cinerea, E. pulverulenta, and E. Stuartiana is very carefully reduced. There are no fewer than three different species under the name of E. Stuartiana in botanical literature. Practically all the commercially important species of Eucalyptus have now been defined and figured by Mr. Maiden.

Extension of Area under Wheat.—With the arrival of the time for preparing the land for autumn and winter sowing, the Agricultural Consultative Committee desires again to impress upon farmers the great importance, in the national interest, of largely increasing the acreage under Wheat during the coming year. The views of the committee have already been expressed in the following extract from their notice of August 18:—"1. The acreage under Wheat should be largely increased wherever practicable. In this direction it should not be forgotten that, on clean land, and by the aid of suitable artificial manure, good crops of Wheat can be obtained in successive years. Attention is drawn to Section 26 of the Agricultural Holdings Act, 1908, which permits any system of cropping subject to the holding being protected from deterioration. 2. There is much land of a certain class now under grass which would probably pay for breaking up. If this land is scheduled as arable in the farm agreement, the tenant has the option of ploughing it up. If it is scheduled as grass, the Agricultural Consultative Committee suggests co-operation between owner and occupier as to the advisability of breaking up certain fields in view of the national question of increasing home-grown food-stuffs." The committee do not suggest that good grazing land should be broken up, and it is realised that the circumstances of each individual holding must be examined in considering the above recommendations; but it is pointed out that should it be found possible to increase the Wheat acreage without detriment to the livestock and general organisation of the particular holding, there seems every reason to suppose that it might prove to the financial advantage of the grower. Farmers would probably find it profitable to sow Wheat on land other than that which would be drilled in the ordinary course, and the nation would benefit, equally with the grower, by an addition to the home-grown Wheat crop.

Agricultural Returns, 1914. — The Preliminary Statement of the Agricultural Returns for England and Wales collected in June last shows a decrease in the area under crops and grass of 15,470 acres. The arable area declined by 60,000 acres, but there is an increase in the area of permanent grass of 44,600 acres. Wheat has increased by 106,000 acres, or by more than 6 per cent., this amount being very largely substituted for Barley and Oats, which declined by 54,000 and 45,000 acres respectively. Most of the other crops (apart from Clover and rotation grasses) show increases—notably Beans by 26,000 acres, Potatos by nearly 20,000 acres, Mangolds by 13,000 acres, and Vetches by 23,000 acres. Clover and rotation grasses declined by 115,000 acres, and bare fallow also shows a diminution of 47,000 acres.

A Method of Preserving Seed for Shipment.—A method which has proved successful consists in first washing the seeds with weak carbolic acid, and then packing them in moist charcoal previously sterilised with carbolic acid. Seeds of Mangosteen treated in this way germinated well after a journey extending over 3 months. The method was introduced by Mr. I. H. Burkill, Director of the Botanic Garden, Singapore.

Apple Charles Ross.—Some very large fruits of this comparatively new dessert Apple have reached us, sent by Mr. J. J. Foster, of the Aumer Nurseries, Stanmore. One of them has a circumference of 11 inches. and measures 12 inches when the tape is passed over eye and stem. The diameter from top to bottom is 3¾ inches, and the weight is 12½ ounces. It will be remembered that this variety was raised by Mr. Charles Ross, from a cross between

Cox's Orange Pippin and Peasgood's Nonesuch. An illustration of this Apple (under its first name of Thomas Andrew Knight) appeared in our pages on September 30, 1899 (p. 259).

War Items.—Very little news has so far come to hand concerning the doings of gardening friends in France and Belgium, but the following interesting particulars have reached us:—Although the Germans are in Brussels and we read that their artillery is in and around the Botanic Gardens there, as late as September 9 the curator, M. Louis Gentil, was alive and well. and at his post. M. Lucien Chaure, editor of *Le Moniteur d'Horticulture*, is an officer of the Reserve, and took part in the Franco-German war of 1870-71; he has gone to the front. M. Philippe de Vilmorin is an officer and on active service. M. Cayeux, of the firm of Cayeux and Le Clerc, Paris, seedsmen, is also an officer and on service. M. Emile Rosette, the well-known Chrysanthemum grower of Caen, is also in the field. M. Gaston Clement, another eminent Chrysanthemum specialist, is in the Garrison Artillery in one of the forts in the east of France. M. A. Truffaut's two sons and his two sons-in-law are in the field. M. Rivoire, of Lyons, secretary of the French Chrysanthemum Society, is an officer of Reserve; so, too, is M. Nomblot, of the firm of Nomblot-Bruneau and Co., of Paris, the newly-appointed secretary of the National Horticultural Society of France. M. Henri Nonin, the only son of Aug. Nonin, the well-known Chrysanthemum raiser, is a sergeant in a line regiment, having less than a year ago started his military service. His friends in England will be grieved to learn that he is wounded and in hospital. M. Ripard, son-in-law of Mr. George Schneider, president of the French Horticultural Society of London, is with his regiment in the vicinity of Versailles.

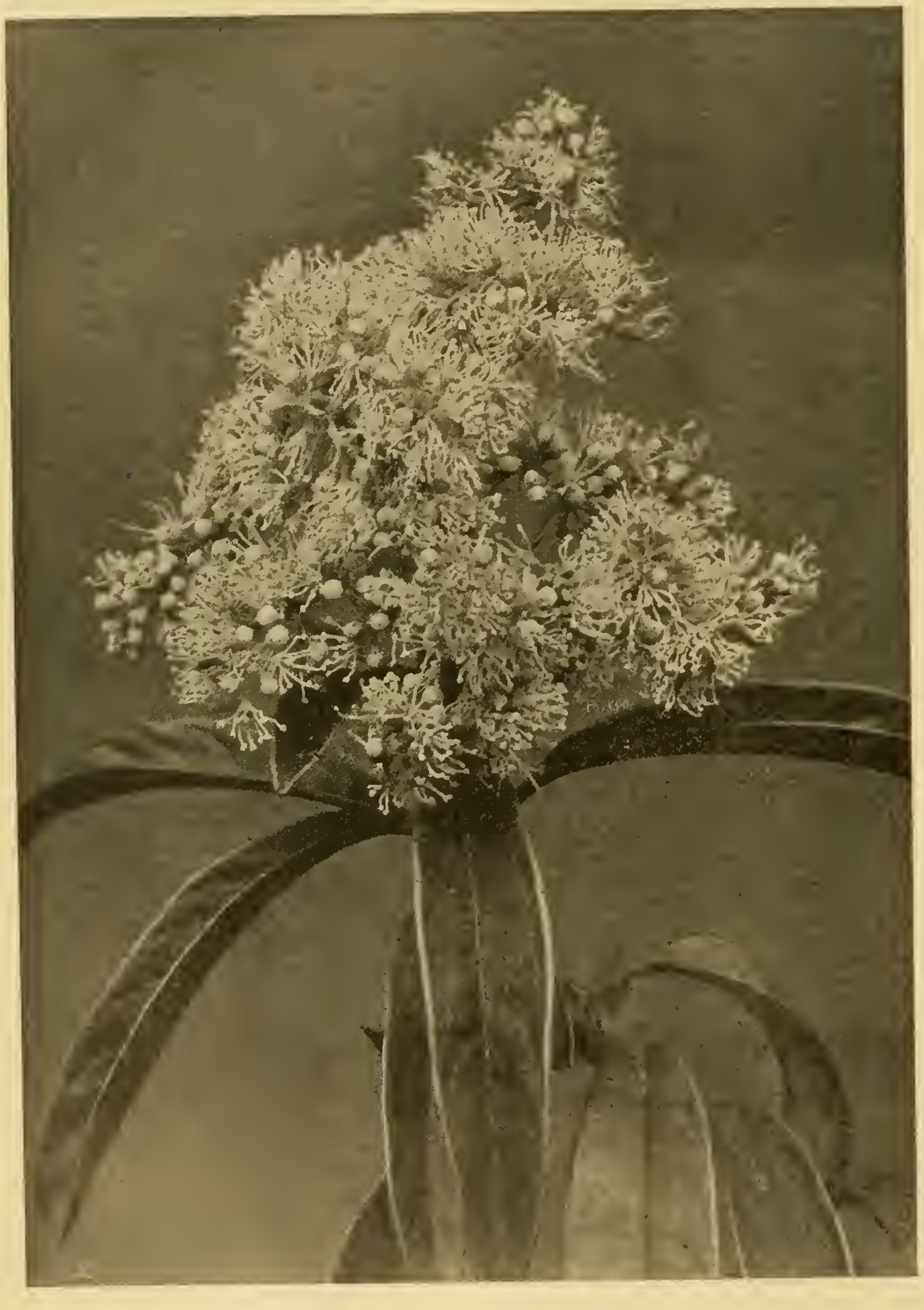


Fig. 95.—PILEOSTEGIA VIBURNOIDES: FLOWERS WHITE.
(Received R.H.S. Award of Merit on September 22, 1914—See report on p. 225.)

—— The Labour Exchanges are making special efforts to furnish farmers with the names of suitable men and women who have had previous experience in farm work, and all applicants will be interviewed and passed by a farmer of standing before they are put into communication with farmers who are in need of them. In notifying their requirements farmers should state fully the wages and other terms they are prepared to offer, and whether free board and lodging will be provided. They should also state clearly whether the work to be done is unskilled or requires special qualifications; whether it can be done by women, and, if so, whether suitable accommodation is available for them.

—— Mr. James Whitton, Superintendent of Public Parks and Gardens, Glasgow, writes us as follows:—"We are hard pressed with work owing to the disorganising effects of the war. One of the members of my office staff is away with the Territorials, also five of my young gardeners from the Botanic Gardens, and others from the various parks. In all 29 of our men have joined the new army, and I expect this week will see some more of the young men off to enlist. My son, who is a Captain in the 7th Scottish Rifles (Territorials), and has been with his regiment since the mobilisation, informs me that all the members of the Lowland Scottish division have volunteered for active service, and it is expected that they will be sent soon to one of the big camps in England to get a month or two's drill before leaving for the Continent."

—— Canada is making a splendid gift of flour to the Mother Country. It has been decided that the sacks, when empty, shall be sold as souvenirs at 5s. each. Two-thirds of this sum will be devoted to the Prince of Wales' National Relief Fund, and one-third to the Belgian Refugees Fund. The sacks are all marked "Canada's Gift." Applications for the sacks as souvenirs, accompanied by a remittance of 5s., should be sent to the hon. secretaries, National Relief Fund, York House, St. James's Palace, London, S.W.

—— The members of the West Calder and Addiewell Horticultural Society have voted £5 to the Prince of Wales' National Relief Fund; the same amount to the Belgian Relief Fund; and a similar sum to the local work party for the provision of garments for soldiers and sailors.

—— Under the auspices of the Carluke Chrysanthemum Society a two days' sale of flowers, fruit, and vegetables, held in the Town Hall, Carluke, on behalf of the Relief Fund, realised the sum of £62.

—— It is announced in America that the embargo on the exportation of potash from the Netherlands has been temporarily removed. The material has in the past been largely shipped down the Rhine and through ports in Holland, and this is now the only outlet for potash from Germany. German growers are also advising their American customers that they expect to be able to send flower and vegetable seeds through the Dutch ports.

—— Dutch bulbs are reported to be of exceptional quality this season, and as a portion of the stock is reported to have been destroyed the standard of those exported is stated to be unusually good. Certain houses in Holland are offering to supply flower and vegetable seeds to American buyers.

American Purchases of Seeds in England.—In a recent issue we announced that Messrs. Kelway and Son had received an order from the United States Government for upwards of forty tons of seeds. This action on the part of the American Government has given rise to a debate in the U.S. Congress, and the subject has been discussed in the Press. The following comments appeared in a Chicago paper:—"Uncle Sam's Seeds.—No circumstance connected with the Government distribution of seeds has in recent years attracted the attention throughout the United States that has resulted from the announcement of Kelway and Son, the English growers, that they have been awarded contracts aggregating about forty-four tons for the 1915 distribution. The fact was the subject of a debate in Congress, as reported in the *Review* for July 2, and is being widely commented on in the daily newspapers. The general attitude is shown by the following editorial from the *Telegram*, published at Adrian, Mich.:—'For many years your Uncle Sam has been spending huge sums of money for seeds, which have been dumped upon the public without method, reason, or sense, let alone economy. The seeds are fired at you whether you want them or not, whether you can use them or not, and no effort is made to find what kind you want or whether you want any at all. It has been a standing joke for a generation, and a costly one. But now we are learning something new. It would not be quite so bad if your Uncle were spending all this money at home; that would at least make work for a lot of people and would encourage a very clean, wholesome and beneficial industry. Uncle Sam is not only wasting seeds by the ton, but he is buying them from abroad. He buys forty-four tons of tiny flower and vegetable seeds at one whack from a single British concern. He also buys from another English firm, we learn, and from two in France and one in Holland. And how about the American seedsman? Why, your Uncle Samuel not only fails to patronise him, but he actually competes with him in the very worst possible way by buying seeds abroad and giving them away to the American seedsman's customers! It is bad enough to invade any industry by giving away its product; but if the Government is bound to do this the least it can do is to give Americans a chance to produce the goods that are given away. As to the manner in which the seeds are given away and the propriety of giving them away at all we have nothing further to say. We are too tired.'" It was ultimately decided, as a result of the debate in Congress, that the policy of distribution be continued, and that the order given to Messrs. Kelway and Son be confirmed, on the ground that although preference should be given to American seeds growers when possible, yet where seeds could not be so advantageously procured in America the question should be looked upon from a business point of view, and orders should be placed in the cheapest and best market. In these circumstances a representative of the United States Department of Agriculture was instructed to visit Messrs. Kelway at Langport to confirm and also to add to the order in question, which was done, and we are informed the order totals now nearly seventy tons in weight of garden seeds.

"Botanical Magazine."—The *Botanical Magazine* for September contains plates and descriptions of the following plants:—

Echinopanax horridus, tab. 8572.—This hardy Araliad is a native of Japan and North America and forms a shrub from 3 to 10 feet high, with palmate leaves from 6 to 10 inches across. It bears small, pale-green flowers, arranged in dense racemes. The plant is capable of withstanding severe cold, but it is difficult to grow in the open ground in this country owing to the comparative warmth of our spring, which causes it to start into growth too soon, the early growth being almost always destroyed by subsequent frost. It is, however, possible to obviate this difficulty by covering the young leaves with glass during the spring, and it is probable that in damp, shady spots, where spring frosts are not severe, it would remain unharmed in the open throughout the year.

Hamamelis vernalis, tab. 8573.—This North American species of Witch Hazel resembles the Japanese species (H. japonica) in that its flowering period is from mid-winter to spring. It is not quite so ornamental as the Japanese and Chinese species, having dull, rather glaucous leaves, and petals of a less brilliant yellow. It thrives in loamy soil and forms a shrub about 6 feet high. The species is usually propagated by grafting on H. virginiana.

Pimelia ferruginea, tab. 8574.—This is a hard-wooded shrub, widely distributed in the southern parts of Western Australia. The erect stems are about 2 feet high, and in spring bears globose heads composed of numerous flowers, the colour of which varies between pink and deep red. The leaves are usually obovate-oblong, about ½ inch in length and 1-6th of an inch wide. The species is an old garden plant, and was at one time extensively cultivated, the bright colour of the flowers making it a highly ornamental plant. The cultural conditions are in general those required by Cape Heaths; in a cool, sunny greenhouse it thrives well and flowers freely.

Aconitum rotundifolium, tab. 8575.—This Monkshood is found wild in Western Central Asia and Northern Afghanistan. It is capable of establishing itself at an altitude of 17,000 feet above sea level, but at this height it becomes considerably dwarfed. Normally it is a herb of about 6 to 16 inches in height, with pale-green orbicular cordate leaves, mostly arranged in a rosette at the base of the stem. The inflorescence consists of a few racemes of greenish-white flowers, marked with violet veins and somewhat flushed with violet. The plant is, unfortunately, not hardy; at Kew Gardens specimens grown in an open border flowered in July, but they did not survive the winter.

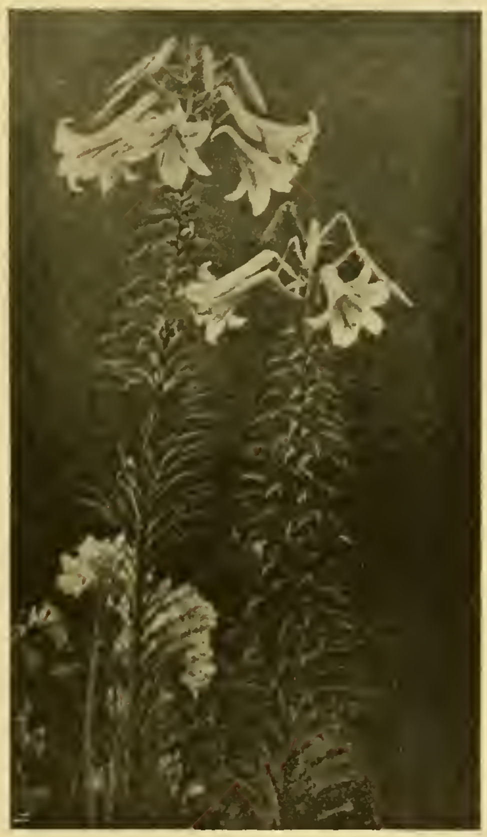


Fig. 96.—Lilium sulphureum in an Australian garden.

The tallest plant has fifteen flowers and flower buds. (See p. 240.)

Tillandsia benthamiana var. Andrieuxii, tab. 8576.—This is a comparatively new variety, having been sent to this country in 1912 from Central America, where it is indigenous. Like most Tillandsias, the plant is an epiphyte, almost without a stem; the leaves are very long and narrow, being 6 inches long and only ½ inch wide at the base. The flowering bracts are rosy-pink and the petals deep violet, slightly recurved at the tip. The species will flower in this country in a tropical house, and thrives well under the treatment usually given to other small epiphytic species of the genus. The present variety was discovered by Mr. G. Andrieux at Chalco, in Mexico, where it was epiphytic on an Oak.

Bowling in Edinburgh Parks.—The total receipts from the bowling greens in the Edinburgh public parks for the year amount to £655, and from the tennis courts £151.

The Effect of Smoke upon the Growth of Pineapples in the Azores.—"A few months ago the Imperial Commissioners of Agriculture communicated with the Assistant Director of the Royal Botanic Gardens, Kew, in regard to the alleged beneficial effect of smoke upon the growth of Pineapples in the Azores. No authoritative statement has been found as to the effect of smoke on Pineapples under glass. The flowering of Pineapples out of season, stated to occur where bonfires have been lighted, may, perhaps, be due to a temperature stimulus, though, except in the case of the plants immediately to windward, the distance would be too great for much effect to be felt. In the case of Pineapples in the Azores it is certainly surprising that filling the houses with smoke for about two hours should bring about flowering. The authorities at Kew question whether some change in cultural treatment is not made before or at the time of the smoking. It appears that no such treatment is made." *Agricultural News* (of Barbados).

Basic Slag for Grass-land.—For many years Professor Somerville has advocated and practised the use of basic slag for the improvement of grass-land. His experience has shown that in the cases of land which responds to this treatment, the meat and milk-producing power of grass-land has doubled or even quadrupled—poor herbage having been converted by the dressing of phosphate into a tangle of white Clover. Professor Somerville now shows by means of a series of careful experiments carried out at the School of Rural Economy, Oxford, and published in the *Journal* of the Board of Agriculture, that grass-land to which basic slag has been added, after having amply repaid the cost of the dressing, contains an accumulated fertility, which is demonstrated at once and in striking manner as soon as the land is ploughed and sown with Oats or other cereals. The experiments indicate that on land thus treated the first tillage crop is likely to show a 50 per cent. increase over that taken from similar but untreated land. In the case of land at Cockle Park, Northumberland, which had been dressed three times during 17 years with 10 cwts. of basic slag, the productive power was shown to have been increased by so much as 153 per cent., and soil from a pasture that had received only 7 cwts. of basic slag three years previously was improved by 124 per cent. This accumulated fertility is to be ascribed partly to the residues of the phosphatic manure, but chiefly to the indirect effects of that manure. Among these indirect effects are the increased accumulation of humus and the larger fixation of nitrogen due to the increase of leguminous plants in the grass-land treated with phosphates.

Fruit of the Double-flowered Peach.—Specimens of fully-grown Peaches, borne by double-flowered trees, continue to be sent to us. We do not remember a season when double-flowered Peaches have borne so many fruits as this year, but the circumstance is quite comprehensible, since out-door Peaches generally are fruiting all over this country more freely than usual. Mr. J. J. Foster sends us, from Stanmore, a shoot bearing five large fruits.

KEW NOTES.

ZEPHYRANTHES CANDIDA.

This bulbous plant, popularly known as the Peruvian Swamp Lily, is flowering freely in several parts of the garden. It grows best in light, well-drained soils, so that the sandy loam of Kew Gardens is suited to it. It is valuable as an edging to sunny, south borders, making a substitute for tiles, stones, or Box-edging. At Kew it is planted in a double row, about 2 inches from plant to plant, making an effective edging. The bulbs increase freely, the roots no doubt finding in the close proximity to a gravel walk congenial conditions. Zephyranthes candida is a native of La Plata; the dark-green, linear leaves are 8 to 10 inches long. The Crocus-like flowers are white, about 6 inches in height, and nestle prettily amongst the foliage.

SINGLE CHINA ASTERS.

The single China Aster, Callistephus hortensis, is planted extensively in the pleasure grounds, being a most effective subject late in August, September, and early in October. Some of the plants are flowering where the seeds were sown towards the end of March and the second week in April; others were transplanted as seedlings, these being some ten days later in flowering. In autumn, when very few trees and shrubs are in flower, broad stretches of colour, such as these single Asters afford, are very effective and welcome. At Kew the seeds are scattered in the borders, where deciduous shrubs are planted thinly, and in bare places where alterations were made last winter. Shades of blue and mauve predominate with a sprinkling of white and rose.

SUTHERLANDIA FRUTESCENS.

Four round beds near to No. 4 conservatory, planted with this South African half-hardy shrub, have been for some time past, and are still (September 24), attractive. The elegant pinnate leaves are very ornamental, and from their axils develop with freedom racemes of red flowers. The blossoms are followed by inflated seed-pods, so that the plant is known popularly as the Cape Bladder Senna. Seeds form a ready means of propagation of the species.

THORNS AND PYRUSES.

Many species and botanical varieties of Crataegus and Pyrus, laden with brightly-coloured fruits, are both ornamental and interesting. They form useful specimen trees of moderate size for the lawn, pleasure grounds, shrubbery borders and outskirts of the woodland. Among a large number of Thorns fruiting freely in the Rosaceae collection at the south end of the Temperate House the following are particularly attractive:—Crataegus mollis, with large red fruits; C. Crus-galli, the Cockspur Thorn, and its numerous varieties with clusters of red fruits; C. orientalis, red; and its var. sanguinea, a tree laden with mahogany-red fruits; C. tanacetifolia, the shining yellow fruits are tinted red on the sunny side; C. coccinea, C. tomentosa and C. punctata, all with fleshy, red fruits; C. prunifolia, of which there are several trees with numerous clusters of dark-red fruits; and C. macrantha, which has glistening, waxy-red fruits.

The Pyrus family offers considerable variety in the size, form and colour of the fruits. Among the first to ripen are those of the Sorbus or Aucuparia section, which includes Pyrus Aucuparia, the Mountain Ash, in several varieties, including one with yellow fruits. The smaller branches are this autumn weighed down with heavy crops of fruit. Pyrus Aria, the White Beam Tree, is another very ornamental tree, carrying a heavy crop of Orange-yellow fruits; Pyrus Ringo, one of the Japanese Crabs, is a beautiful sight, clothed with glistening yellow fruits. P. prunifolia has scarlet fruits; P. baccata, the Siberian Crab, has showy fruits coloured red on the sunny side; while the common Crab Apple, Pyrus Malus, in its numerous varieties, are all very attractive, in addition to which the fruits are prized for making preserve. *A. O.*

LILIUM SULPHUREUM IN AUSTRALIA.

I send a photograph (see fig. 96) of two inflorescences of Lilium sulphureum. The taller is 7 feet high, carrying 15 flowers and buds; the bulbs are growing in the light granite soil of my garden and exposed to full sunshine all the day, the natural rainfall being the only supply of moisture available. The photograph was taken on February 8 last, just two days after the shade thermometer registered 106.8 Fahr. at Melbourne (40 miles due west of this place).

Early in July we had 6° of frost, which marred the new growths of L. longiflorum, but to-day (August 18) many old stems of L. nepalense are carrying their leaves, the latter quite as green as when the flowers were borne last summer. *G. Errey, Victoria, Australia.*

RED HOUSE, HARROW-ON-THE-HILL.

Few who pass the tall, brick wall which surrounds the beautiful garden of Mr. John Templer Prior, or who see it on the high ground above the Harrow School cricket fields, can imagine the extent and variety of subjects to be seen within its bounds.

Mr. Prior has been a garden lover and earnest worker from childhood, and not only does he find a great pleasure in his own gardens, but takes special interest in the cottage gardens and allotments in the neighbourhood.

The rock-bound walks around the fine old house always have an interesting show of flowers, including many favourites of the old-time garden, and the herbaceous borders with occasional clumps and pillars of Roses and Rose-covered walks arranged without any set plan have a charming effect.

The outer walks have a good selection of uncommon, flowering shrubs which are allowed to grow naturally. A lofty mass of Buddleia variabilis annually sends forth a wealth of its pretty spikes of light mauve flowers, which set and ripen their seeds, the seedlings coming up freely at the sides of the walk and border beneath. Great bushes of Rosa rugosa bearing flowers and fruits have a good effect with the Buddleia and other shrubs.

Beyond is the orchard, and most of the Apples have been very heavily cropped, one huge tree of Bramley's Seedling being weighed down with an immense quantity of fine fruits. The large Pear and Plum trees were similarly well cropped. Rival Apple is a most beautiful variety, the fine fruits having the colouring of a Peach.

The kitchen garden is a model of well-filled and heavily-cropped ground, in which everything seems to thrive but weeds, and they are eradicated before they can arrange a succession crop for another season, a matter which is often overlooked, even in small holdings and allotment gardens, where it is a common thing to see Groundsel, Plantain and other troublesome weeds simply hoed up and left on the ground to spread their seeds. Such weeds should be hoed in the earliest stage, cleared off, and burnt. The Red House has its well-stocked poultry run, its pond for geese and ducks, and generally may be said to be self-contained. *J. O. B.*

Publications Received.—*Report of the Department of Agriculture, Ceylon.* July 1, 1912—December 31, 1913. (H. C. Cottle, Government Printer, Ceylon).

HOME CORRESPONDENCE.

Winter Employment on Country Estates.—It is the practice for many owners of country establishments to arrange works for the relief of unemployed labourers every winter, it being recognised that this is the most effective form of charity. Such operations are generally connected with the improvement of gardens and other amenities of the estate. At present there is natural hesitation about initiating work of a superfluous nature, but the question of relief is being considered in many quarters. We take the liberty of submitting a few notes on the subject, which, if somewhat obvious, may yet be useful. We trust it will not be out of place to suggest that, notwithstanding their economic purpose, some of the operations mentioned offer opportunities for adding to the picturesque effect of situations in which this is an important consideration. Amongst other works which may be undertaken are:—The general improvement of garden grounds; also repairs to carriage drives; renovation and drainage of estate roads and farm-yards; easing gradients; removal of obstructions at dangerous corners on highways; field and garden drainage; dyke construction; cleaning ditches and waterways; reclamation of flooded and marshy ground; improvement of storage and distribution of water supply; making reservoirs and new ponds; irrigation works; cleaning mud from ponds, repairing banks of rivers and streams; general afforestation, establishment of nurseries; shooting, ornamental, protectective and commercial plantations; removal of trees in fields prejudicial to cultivation; grubbing dead trees and old stumps, lopping unsafe timber; pruning, dressing, waterproofing, bolting and guying ornamental timber; making tree guards and protections from cattle and rabbits, collecting acorns, chestnuts, Beech-nuts and other fodder fruit; trimming and laying hedges, repairing fences, gates and bridges; erecting rabbit netting; improving cottage ventilation and other sanitary arrangements; exterminating rats and other vermin; deep trenching; eradicating weeds; ploughing up poor pasture and cultivating waste land; intensive cultivation; planting new orchards; overhauling and re-establishing old orchards; treating diseased trees; exposing gravel, sand and chalk pits and quarries for commercial use; burning ballast; collecting seaweed, decayed vegetation, leaf mould and wood ash; making composts; constructing liquid manure tanks; forming recreation grounds, rifle ranges, bathing ponds; organising rural industries and markets for disposal of surplus garden produce, storage and preservation of fruit, repairing tools and implements; sawing fire logs; basket, broom and mat-making and similar occupations for women and children. *Milner, Son and White.*

Broccoli, Old and New.—Referring to the question raised by your correspondent, *W. P. R.*, in a recent number (p. 119), we should like to take the opportunity of mentioning that neither of the varieties first named, i.e., Michaelmas White, Winter Mammoth, Christmas White or Eastertide, has any direct or indirect relation to Snow's Winter White, Wilcock's Bride, Adam's Early, Cattell's Eclipse, Backhouse's Winter White, Champion Late White, Ledsham's Latest of All, nor could either of the former be mistaken for any of the latter named if grown alongside. Michaelmas White, Winter Mammoth, Christmas White, and Eastertide are all Broccolis introduced by our house, and the reason why some of the older sorts which your correspondent names are not now seen in seed catalogues is that they have been superseded by very much better varieties. Michaelmas White has received an Award of Merit from the Royal Horticultural Society, and Winter Mammoth, Christmas White, and Eastertide are on trial at Wisley this year. *Sutton and Sons.*

Peaches and Nectarines at Aldenham House.—The crops of fruit this year at Aldenham House, Elstree, have been particularly successful, and as I had the pleasure of seeing the gardens when the orchard-house fruit-harvest was at its height a few notes on the subject may be of interest to readers of the *Gardeners' Chronicle.* I have been at Aldenham in late summer for two successive years, and when examining the Peach and Nectarine trees last year I was struck by the healthy, fully-ripened appearance of the wood, which promised well for a good crop this season. The promise has been amply fulfilled in the case both of trees under glass and of those on the open walls. Mr. Beckett, the head gardener at Aldenham House, does not fall into the too-common error of overcrowding the trees with useless shoots, but prunes thoroughly in the early autumn, thus providing ample space for the shoots which remain. The Peach trees are remarkably free from pests. Even the destructive and too prevalent red spider seldom obtains a footing, as prompt preventive measures are taken at the appearance of the first symptoms. The inside trees usually provide ripe fruits from the end of May to the end of August, and those in the open until the first week in October. From the early house excellent fruits of Royal George and Grosse Mignonne are obtained, with Violette Hâtive and Lord Napier Nectarines. In the second house Dymond and Grosse Mignonne bear well; a tree of the first-named variety covers a space on the front trellis seven yards long. In the same house a tree of Dryden Nectarine yields very good fruit. In the third house are healthy trees of Pitmaston Orange and Stirling Castle Peaches, which immediately precede those in the late house, viz., Dymond, Grosse Mignonne, and Violette Hâtive Peaches, and Hardwicke, Pine Apple, and Early Rivers Nectarines. The outside Peach wall is about 10 feet high and 100 yards long, with a western aspect. In front of the trees is an open space; the common mistake of planting tall, herbaceous plants or coarse vegetables within a yard of the wall has not been committed. Strawberries are the only plants grown near the wall, and these are not permitted within 4 feet of it. The wall varieties are Early Alexander, Dymond, Peregrine, Grosse Mignonne, Bellegarde, Violette Hâtive, Royal George, Prince of Wales, and Barrington Peaches, and Lord Napier, Rivers' Orange, Spencer, and Pineapple Nectarines. *E. Molyneux.*

Chimonanthus fragrans (see p. 217).—We have specimens of Chimonanthus fragrans in various parts of the gardens. The plant flowers annually, and sets seeds freely in Scotland. Our largest plant was raised from a seed that was gathered at Pinkie House, Musselburgh. Three years ago seeds were sent to me from a large establishment in Cumberland, where several pods matured. While referring to seeds, I may mention that several Cedars here are carrying a large number of cones this season. Seldom have we seen Arbutus Unedo, the Strawberry tree, with such a load of fruit as it bears at the present time. Yesterday I gathered a good ripe Fig from a standard tree in the orchard. We have the exceptionally fine season, now drawing to a close, to thank for such results. *J. Jeffrey, The Gardens, St. Mary's Isle, Kirkcudbright*

Botanising in China.—On receiving your issue of the 12th inst. I turned to p. 185 to read the first of a series of articles under the heading "Mr. Reginald Farrer's Explorations in China." It will interest many of your readers to know that Mr. W. Purdom took an active part in organising the expedition, and went to Pekin some weeks ahead of Mr. Farrer to have all in readiness for a start up country in the early spring. As you will be aware, Mr. Purdom has previously explored much of the ground already covered, and any measure of success—and I trust it may prove a full measure—that attends the labours of this exploring party will be largely due to the experience previously gained by him. I feel sure Mr. Farrer will be the first to acknowledge this. *C. H. Hough, White Craggs, Clappersgate, Ambleside.*

Our Duty in War-Time.—There are many gardeners and other people who are not realising what is their real duty in the present time of war. The staff in some places has been decreased, bulbs and plants with all sorts of other gardening adjuncts have not been ordered or purchased, and gardening at this time appears to be one long false economy. If such goes on the country will suffer by loss of this trade, and suffer terribly. Many more people than are at present out of work will have nothing to do and misery will be rife. So I write this short letter on the important subject of our duty at the present time, hoping it may be given the careful thought of your readers. What is really wanted in the gardening profession is normality. As far as possible it is the clear duty of all gardeners and others to continue working and purchasing on the same lines as they did before war was declared. And it will be rightly said that nothing could be more difficult. Nearly everywhere one goes one meets with people economising in the garden. Many are saving seeds this year, and this interesting occupation is to be recommended, but this home-saved seed should not be wholely substituted for that usually bought from seed firms. Seed, bulb, and plant firms want patronage more now then ever, for many are subscribing generously to the relief and other funds. The same applies to those who sell Roses, shrubs, gardening tools, and sundries. No doubt some may perforce have to go without these things—quite against their will, too—but there are others, rich people, to whom such economy does not apply. Rich and poor alike have subscribed generously to the relief funds, and it will be said that the money I urge to be spent on garden plants, shrubs, etc., should be given to the funds. That is one way of looking at it. Now for the other. If everyone will sible many hundreds of men will be kept employed, many unable to go to the front, who continue gardening in as normal a way as pos- would otherwise suffer with their families. The gardening trades will not only be kept going or encouraged to keep going by such a course of action, but the pottery and many other trades connected with the garden will be helped in this time of stress. This letter must be brief, but may I close with a plea to all gardeners and gardening people to continue as far as possible to work their places on normal peace lines? We do not want more suffering and poverty than need be at this sad time, and many men may be kept employed if people do not neglect the horticultural trades. Gardening need not be considered as a luxury by those who are blessed with much of this world's goods, and gardeners can, if they will, influence masters to continue purchases and employments on normal lines. Open-handed charity has its bad points, some of which cannot be easily remedied, but it is quite as good in my mind to keep on employing a gardener who cannot go to the front because of a family dependent upon him as to give liberally to relief funds. *E. T. Ellis, Weetwood Hall, Ecclesall, Sheffield.*

Semele (Ruscus) androgyna.—This plant has never fruited so freely here as it is doing this year. It is covered with red berries. I send you a leaf, or rather cladode, which had three berries on it, but one came off in bringing it down. The plant is about ten years old, and grows up a north-west wall to a height of about 10 feet, and then along wire netting strained at the top of the wall for another 15 feet, so it is 25 feet in height, or rather length, at present. In the hard frost of February two years ago it was cut down to the ground, but it grew in the spring. *Wyndham Fitzherbert, Kingswear, Devonshire.*

Holboellia latifolia.—In answer to Mr. Cave's query, p. 201, the flowers, as grown in England, are greenish-white and very fragrant. At Knowsley we have plants growing in large pots and others planted out in a cool house. In both cases they flower freely during May and June. In greenhouse and intermediate temperatures the shoots grow from 4 to 7 feet long during the summer. *C. H Cook, Knowsley.*

Late Peas (see pp. 202, 225).—All cultural Peas succeeded very well here until the middle of July, when we experienced a fortnight of exceptionally cold weather, including heavy showers from the north-west. Mildew and streak disease affected the plants severely, and spraying, although practised early, was of little avail. The variety which suffered least was Petits Pois, a very prolific and good-flavoured Pea, although inclined to be small. Late Queen is a well-known variety. We are picking pods of Latest of All now, and the crop is very promising. Peerless proved a very good mid-season variety with us. *M. A., Co. Kerry*

—— We have had experience similar to that of Mr. Beckett with Peas this season. On October 23, 1913, we picked excellent pods from Autocrat and Chelsea Gem in the open. This year, although the same varieties were sown at about the same date, the pods of Chelsea Gem are too old for table use, whilst Autocrat is just about finished. The early maturity of Savoys, Winter Spinach, Broccoli and Lettuce (to name a few crops) is also very marked compared with previous years. Yet the rainfall for June, July and August amounted to more than fell in the corresponding months of last year. *C. H. Cook, Knowsley.*

—— With reference to Mr. Beckett's remarks, we have not experienced failure with our late Peas, nor are they diseased, but in the last fortnight in July and the first week in August the crop suffered severely from streak and mildew. This refers to certain of the leading varieties, such as Duke of Albany, Prodigy, Alderman and Centenary. From August 10 to the first week in September we had a fine crop of Peerless, the plants without the slightest trace of mildew or any other disease. This I consider one of the finest culinary Peas in cultivation, following with Gladstone, which has done well up to the present. *Wm. Gaiger, Studley Castle Gardens, Warwickshire.*

Origin of "Sweet William."—Not long since a book was published on the Jacobite Rebellion, in which it is stated that the Sweet William received that name from the hero of Culloden, known in history as the "Butcher" Cumberland. I was asked if the statement could be true. No, it is not true, but one of those romantic assertions that are continually being made, if not without authority, at least without its truth having been verified. Sweet William appears in 1573 in Tusser's list of flowers in the March abstract of his *Five Hundred Good Points of Husbandry.* I have not seen the designation in any old metrical work or in glosses, so that it is not an ancient name so far as one can determine. Lyte, Gerarde, Parkinson, Rea and Reid, *The Scots Gard'ner*, all mention it as a well-known plant. It is not without interest that the name of a spotted Sweet William was known as London Pride, and that as early as the beginning of the seventeenth century. Later the name was transferred to Saxifraga umbrosa, and here also we find a personal name being sought to give it the needed éclat, that of London, the famous nurseryman, coming in as a sponsor, and as having distributed the plant, though known long before his day. Threlkeld has been noted as being the first to print the name in 1727, but it appears earlier in Ray's *Synopsis* as the common name of this long popular flower. Of "Sweet William" itself there has been no satisfactory explanation ever given. Dr. Prior thought it came from the French Œillet, but the old French name happens to be "Armoire," from Armerius, which Philip Miller regarded as the source of both Sweet William and Sweet John. *R. P. Brotherston.*

Tropaeolum speciosum.—This beautiful climber is not difficult to cultivate, but success can only be ensured by careful attention to details. Deep trenching is essential, and over the trench a good, rich surface soil, composed of well-rotted manure, leaf-mould, and loam, passed through a coarse sieve. The fleshy roots should be planted about 3 inches below the soil, and then covered with a mulch of rotten manure, finely sifted. A few large stones placed in front of the bed, and some smaller ones laid over the manure, help to shade the roots and retain the moisture during very dry weather, and the plants should be watered now and again. The beginning of November is a good time to plant. It is important to provide a support for the tendrils to cling to, from the very first. The plant can be grown over all kinds of things—shrubs, Holly hedges, Yew bushes. Perhaps the most effective plan is to allow it to ramble at will over a bare wall, covered with galvanised netting. The netting is cheap and efficient; it should be nailed loosely over the wall from the ground to a height of 15 feet or more. All the summer the wall will be covered with a mass of beautiful scarlet flowers, and when these are over, and the blue berries make their appearance, the effect is scarcely less charming. Tropaeolum speciosum is very effective when combined with Solanum jasminoides; here in Scotland this lovely climber, with its white, freely yielded blossoms, is seldom seen, and yet it is so easy to grow—it can be propagated by cuttings, as a "Geranium." Or one can keep plants in small pots, and sink them in the open ground in the spring, housing them during the winter in a cool, but frost-proof house. Treated in this way, they bloom gloriously all the summer, yielding a wealth of pure-white blossoms. *Hawick.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

September 22.—Present: Mr. E. A. Bowles, M.A., F.L.S. (in the chair), Messrs. E. M. Holmes, J. T. Bennett-Poë, A. Worsley, J. Fraser, and F. J. Chittenden (hon. secretary).

Sawfly on Viola.—Mr. Bowles said he had received a letter from Mr. F. D. Morice of Woking concerning the sawfly larvae, which he had found feeding on Violet. He thought they were probably the larvae of Taxonus glabratus, a small purplish-black insect with red legs, which is widely distributed, and does not feed exclusively on Violas.

Origanum species.—Mr. Fraser showed specimens of Origanum which he had been growing, and pointed out that some confusion had apparently arisen with regard to the habit and duration of some of the species. Mr. E. M. Holmes, who has given particular attention to this genus, took some of the specimens for further examination and report.

Two-podded Sweet Pea.—A photograph of an inflorescence of Sweet Peas was received, from which it was evident that one flower had produced two pods arising from two distinct carpels. They both appeared to occupy an anterior position, but this could not be certainly determined.

NATIONAL SWEET PEA.

ANNUAL GENERAL MEETING.

The annual general meeting of the National Sweet Pea Society will be held at the Westminster Palace Hotel, Victoria Street, Westminster, S.W., on Monday, the 12th inst., at 2.30 p.m.

The committee wish it to be understood that owing to the present situation there will not be any conference or dinner after the meeting.

NATIONAL CHRYSANTHEMUM.

The following is the text of a circular-letter sent by the secretary to the members of the National Chrysanthemum Society: — "The October and November shows for the current year have been cancelled by the trustees of the Crystal Palace, in consequence of the Palace having been taken over by the Naval Authorities for training purposes. This involves the loss of £150 which was payable to the society by way of consideration money. Our other sources of income will also be seriously affected by the European war, and, after taking into consideration all the circumstances of the case, the executive committee has reluctantly come to the conclusion that it will not be possible to hold any shows during 1914.

"It has, however, been decided to hold all the meetings of the Floral Committee on the dates originally arranged. The meetings for October 7 and November 4 will be held at Essex Hall instead of at the Crystal Palace. All these meetings will be extended and enlarged, and members are cordially invited to stage exhibits apart from new varieties. The Floral Committee is empowered to make awards to any exhibits, but it must be clearly understood that all such awards are honorary. Members are invited to visit these meetings. Owing to the extremely limited space, it will be necessary for members who desire to exhibit to give the secretary two days' notice in advance, stating also what vases they will require.

"The meetings arranged for October 7 and November 4 will remain open until 9 p.m. A pass is enclosed which will admit members and friends to all these meetings.

"The special prizes offered by Messrs. Wells and Co., Ltd., for three blooms of the Daily Mail variety will be awarded on November 4 at the Essex Hall. *Richard A. Witty, secretary.*"

ROYAL HORTICULTURAL AFFILIATED SOCIETIES.

I enclose a copy of a letter which I have sent out to the secretaries of societies affiliated with the R.H.S. Any societies at present unaffiliated which may like to avail themselves of the help we are trying to give during the coming winter, when the conditions of meetings will be more difficult than usual, should make application for affiliation forthwith, as lectures will only be sent to those brought thus into direct touch with us. *W. Wilks, Secretary Royal Horticultural Society.*

"Owing to the interruption of the normal conditions of the country by the war the response to the invitation for delegates to be sent to the Annual Conference of Affiliated Societies, which had been fixed for September 30, has been so slight as to induce the President and Council to abandon it altogether. Only one or two subjects of minor importance have been received for discussion. Moreover, owing to the occupation of the hall by the military authorities the Council has been compelled to cancel the Fruit Show fixed for September 29 and 30.

"Realising how hard most, if not all, societies will find it this winter to secure lecturers for their fortnightly or monthly meetings—so many men being away on active service—the Council have had their list of circulating lectures considerably increased and improved by extensive lantern-slide illustrations. It is hoped that the many useful and interesting subjects it includes will relieve secretaries of some of their anxiety in securing lecturers and help to keep going their good work during the coming winter.

"A double-burner oil lantern and sheet may be had on loan for single lectures, the borrower paying only the cost of carriage each way and making good any damage sustained.

"It behoves all societies in the present crisis to do their utmost to keep the gardening interest actively alive in their neighbourhood, and to help to sustain so important a craft as horticulture. The past few years have seen a most remarkable development in the art and science as also in the trade and in the love of gardening, and every effort must be made to sustain this through the present troublous days against the time when Peace is again established. Then, more than ever before, gardening will become one of the most favourite pursuits—its beautiful, refreshing, and quiet appeal will stand out in so much greater contrast to the horrors of war. Our eyes must look steadfastly on to that time, and meanwhile we must prepare ourselves for the greater developments which are coming, and for the greater demand for knowledge and skill which will consequently be made of us. As far as possible, societies are urged to keep their meetings and shows going as usual, exercising judicious economy to combat the financial strain."

DEBATING SOCIETIES.

BRISTOL AND DISTRICT GARDENERS'.—The usual monthly meeting of this Association was held on the 24th ult., Mr. Isaac House presiding. The lecturer for the evening was unable to be present, and Mr. J. C. House gave an address on "Recent Improvements in Hardy Plants." Mr. House referred specially to improvement in the border Aster (Michaelmas Daisy), Delphinium, Gaillardia, Heuchera, Montbretia, Phlox, Pyrethrum, and Tritoma. The 1st prize offered by Mr. House for a vase of hardy flowers was won by Mr. Young.

READING GARDENERS'.—The first meeting of the Association's autumn session was held on the 24th ult. in one of the classrooms at University College. The President was in the chair, and there was an excellent attendance, ladies being admitted on this occasion. Owing to the large amount of business on the agenda, which included the passing of a revised code of rules, it was late before the lecture commenced. Mr. F. Towosend, gardener to the Vice-President, gave a lecture on "The Four Seasons in the Gardens at Hillside, Reading." Mr. Towosend's remarks were illustrated by a collection, numbering over 100, of beautiful slides, taken in natural colours in the gardens of which he has charge.

CHELMSFORD AND DISTRICT GARDENERS'.—The annual meeting of the above Association was held in the East Anglican Institute of Agriculture on Friday, the 25th ult. The President occupied the chair, and about thirty members were present. The Secretary presented his annual report and balance-sheet, the latter showing a balance in hand of £10 10s. Mr. E. H. Christy was re-elected President and Mr. W. H. Ripper Hon. Secretary. Lectures have been arranged for the winter session, which opened on October 2.

BATH GARDENERS'.—The first meeting of the session 1914-15 was held on the 28th ult. Mr. T. Parrott presided. The chairman announced that it had been decided to hold the Chrysanthemum show, and to devote half the profit to the Prince of Wales's Fund. Mr. W. T. Rich read a paper entitled "My Visit to some of the Nurseries and Seed-growing Establishments in Holland, Belgium, France and Germany."

SCHEDULES RECEIVED.

The Perpetual - flowering Carnation Society's Seventeenth Exhibition, to be held on Wednesday, December 2, in the Royal Horticultural Hall, Westminster. Hon. Secretary, Mr. T. A. Weston, Floradale, Orpington.

CATALOGUES RECEIVED.

J. R. Pearson and Sons, Lowdham, Nottinghamshire.—Hardy Fruits and Roses.

Boulton and Paul, Ltd., Norwich.—Buildings.

Ant. Roozen and Son, Overveen, Haarlem, Holland. (Agents for Great Britain: Mertens and Co., 3, Cross Lane, St. Mary-at-Hill, London.)—Bulbs.

James Carter & Co., Raynes Park, London.—Bulbs.

Gartons, Ltd., Warrington.—Seed Wheats.

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands for the week ending Sept. 26, is furnished from the Meteorological Office:—

REMARKS ON WIND AND WEATHE...

At the beginning of the week a moderate to strong northerly breeze prevailed over these islands in the rear of a depression beyond the North Sea. By Tuesday, however, an anticyclone which had arrived from the Atlantic enveloped the Kingdom, and the wind had become light and rather variable. This system travelled slowly eastward, while a milder current of wind from the south-westward set in over our western districts, and extended gradually to the whole country. By the end of the period a very large cyclonic system lay far to the northward of Scotland, and the wind in these islands had veered to the westward, and was increasing decidedly in force. Local thunderstorms, with hail, were experienced in the East and South-east of England on the 20th, but the general character of the weather for the week was very dry and mostly bright. Over a large portion of the Kingdom rain was entirely absent.

THE WEATHER IN WEST HERTS.

Week ending September 30.

Seven degrees of frost.—The days during the past week have been, as a rule, warm for the time of year, while nearly all the nights, on the contrary, have proved cold, and on the last night—that preceding the 30th inst.—the exposed thermometer registered 7° of frost—the greatest cold as yet of the present autumn. In the last 28 years there has been only one other instance of so low a temperature in September. The ground is at the present time at about an average temperature at 2 feet deep, but 2° colder than is seasonable at 1 foot deep. There has been no rain at all for nine days, and during the same period no rainwater has come through either of the percolation gauges. The sun shone on an average for 7½ hours a day, or for 3½ hours a day longer than is usual at the end of September. On three days the sun was shining brightly for over 9 hours a day. Light airs and calms have alone prevailed, the direction of those light airs being very variable. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as 18 per cent. My Dahlias were in no way injured by the frost above mentioned. *E. M., Berkhamsted, September 30, 1914.*

MARKETS.

COVENT GARDEN, September 30.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz.	3 0- 4 0
Carnations, per dozen blooms, best American varieties	1 3- 1 9
— smaller, per doz. bunches	10 0-12 0
— Carola (crimson), extra large	2 6- 3 0
— Malmaison, per doz. blooms	
— — pink	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz.	2 0- 2 6
— yellow per doz.	2 0- 2 3
— pink ,,	1 9- 2 0
— bronze ,,	1 6- 1 9
— white, medium per doz.	1 3- 1 0
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun.	4 0- 6 0
— — yellow, per doz. bun.	3 0- 4 0
— — pink, per doz. bun.	4 0- 5 0
— — bronze, per doz. bun.	3 6- 5 0
Eucharis, per doz.	2 6- 3 0
Gardenias, per box of 15 and 18 blooms	1 3- 2 0
Gladiolus brenchleyensis, scarlet, per doz. spikes	2 0- 2 6
Lapageria alba, per doz. blooms	1 6- 2 0
Lilium auratum, per bunch	2 6- 3 0
— longiflorum, per doz., long	1 6- 2 0
— — short	1 9- 2 0
Lilium lancifolium album, long	1 6- 2 0
— — — short	1 3- 2 0
— — rubrum, per doz., long	1 0- 1 3
— — — short	1 0 —

	s. d. s. d.
Lily-of-the-Valley, per dozen bunches:	
— extra special	15 0 —
— special	10 0-12 0
— ordinary	8 0- 9 0
Marguerites, per doz. bunches	1 0- 1 3
Michaelmas Daisies, per doz. bunches	3 0- 4 0
Orchids, per doz.:	
— Cattleya	9 0-10 0
— Cypripedium,	1 6- 2 0
— Harrisonii, per doz. blooms	4 0- 5 0
— Odontoglossum crispum	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	3 0- 4 0
— white, per doz. bunches	3 0- 4 0
Physalis, per doz. bun.	4 0- 6 0
Roses: per dozen blooms, Bride	0 6- 1 0
— Bulgaria	1 0- 1 6
— Frau Karl Druschki	1 0- 1 6
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	0 9- 1 0
— Liberty	1 0- 1 6
— Madame A. Chatenay	1 0- 1 6
— Melody	1 0- 1 3
— My Maryland	0 9- 1 3
— Niphetos	1 0- 1 3
— Richmond	1 0- 1 6
— Sunburst	1 0- 1 6
— Sunrise	0 9- 1 0
— White Crawford	1 0- 1 3
Statice, mauve, per doz. bunches	1 6- 2 0
— white, per doz. bunches	2 0- 3 0
Stephanotis, per 72 pips	— —
SweetSultan, mauve per doz. bnchs.	2 0- 2 6
— white	2 0- 2 6
Tuberoses, on stems, per doz.	0 5- 0 6
— short, per doz.	0 3- 0 4
Violets, English, per doz. bunches	1 6- 2 0
White Heather, per doz. bunches	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches	12 0-18 0
— Sprengeri	6 0-12 0
Autumn foliage, various, per doz. bunches	4 0- 6 0
Carnation foliage, doz. bunches	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch	1 0- 1 6
Lichen Moss, per dozen boxes	9 0-10 0
Moss, gross bunches	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches	8 0- 9 0
Smilax, per bunch of 6 trails	1 0- 1 3

Remarks.—Business and prices generally are better, but before the close of the market last Saturday many subjects were sold cheaply, possibly because supplies were very large. Flowers that rose suddenly in value last week are gradually getting cheaper, and this is most noticeable amongst Liliums, Lily-of-the-Valley, bunch white and best coloured spray Chrysanthemums. For large and medium-sized blooms of white Chrysanthemums prices remain firm; there is a shortage of the latter blooms. The prices for coloured varieties such as Cranford Pink, Bronze Almirante, Yellow Mercédès, and several others, which are all of excellent quality, show but little alteration. Roses, such as Mme. Abel Chatenay, My Maryland, Melody, Lady Hillingdon, Kaiserin Augusta Victoria, Sunburst, Liberty, and a few outdoor blooms of Mrs. John Laing, may be had in a much better condition than hitherto, and more suitable for despatching to the provinces. This remark also applies to Carnations. There is an abundant supply of Michaelmas Daisies, Physalis, and well-berried Pernettias. Statice is practically finished, and this week will almost see the finish of Asters.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated	30 0-60 0
Cacti, various, per tray of 15's	4 0 —
tray of 12's	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Croton, per dozen	18 0-30 0
Cyclamen, 48's, per doz.	10 0-12 6
Dracaena, green, per dozen	10 0-12 0
Erica nivalis, 48's, per dozen	12 0-15 0
— — thumbs, per doz.	3 0- 5 0
— gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	9 0-12 0
Ferns, in thumbs, per 100	8 0-12 0
Ferns, in small and large 60's	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen	8 0-12 0
— in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz.	4 6- 5 0
— — 60's, per doz.	3 0- 3 6

	s. d. s. d.
Geonoma gracilis 60's per dozen	6 0- 8 0
— larger, each	2 6- 7 6
Hydrangeas, pink, per doz. 48's	10 0-18 0
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0-36 0
Latania borbonica, per dozen	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz.	15 0-21 0
— longiflorum, per dozen	12 0-15 0
Lily-of-the-Valley	—
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	—
Palms, Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — — 60's, per doz.	8 0-12 0
Pandanus Veitchii, per dozen	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Solanums, 48's, per dozen	8 0- 9 0
Spiraea, white, 32's per dozen	6 0- 8 0
— pink, 32's, per dozen	9 0-12 0

Remarks.—There is a good supply of pink and white Ericas of large and small sizes. Chrysanthemums in 48 pots are of fine quality, yet the growers have a difficulty in finding a sale for them. Ferns may be had in great variety and the plants are in excellent condition.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
— Californian, Newtown Pippins, per box	7 6 —
— English dessert, per ½ bushel	2 6- 4 6
— cooking, 1 bush.	2 0- 4 0
Bananas, bunch:	
— Double Ex.	8 0- 9 0
— Extra	7 0- 7 6
— Medium	6 0- 6 6
— Giant	9 0- 9 6
— Extra-medium	6 0 —
— Red, per ton	£20 —
— Jamaica, p. ton	£15 —
Blackberries, per peck	1 0- 1 6
Cobnuts, per lb.	0 4½- 0 5
Cranberries, per case	14 0 —
Damsons, per ½ sieve	1 0- 1 6
Figs, English, per doz.	1 0- 2 0
Grapes: Black Hamburgh, per lb.	0 8- 1 6
— English, Gros Colmar, per lb.	0 9- 1 3

	s.d. s.d.
Grapes (*continued*)—	
— Gros Maroc, per lb.	0 9- 1 0
— Muscat of Alexandria	1 0- 2 6
— Canon Hall, per lb.	1 0- 3 0
Lemons, per case	15 0-22 0
Melons, English	0 9- 1 0
Nuts, Brazils, per cwt.	60 0 —
— Walnuts (English), per doz. lb.	6 0- 8 0
Peaches, English, per doz.	3 0-12 0
Pears, American, per barrel	39 0-40 0
— Californian, per case	7 6-15 0
— English, ½ sieve	3 0- 6 0
Plums, Californian, per case	14 0 —
— English, per ½ bushel	3 0- 5 0
Sloes, per doz. lbs.	2 0- 2 6

Remarks.—The market is well supplied with culinary Apples of all market varieties in season. A shipment of about 10,000 barrels of Apples is due to arrive from Nova Scotia, principally Gravenstein variety. There are also some choice fruits of Newtown Pippin from California. English growers are sending an ample supply of Pears, the bulk consisting of the varieties Calabash and Pitmaston Duchess. Pears are also arriving from Holland and California. Plums are almost over, but Damsons are abundant. It is expected that supplies of Peaches will cease this week. Grapes of all kinds are arriving in ample quantities. The market is well supplied with Cobnuts and Walnuts. Tomatos and Cucumbers are scarcer.—*E. H. R., Covent Garden, September 30, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, Globe, per doz.	4 0- 5 0
Beans, French, per lb.	0 6- 0 8
— Scarlet Runner, per bushel	3 0- 5 0
Beetroot, per doz. bunches	1 0- 1 3
Brussels Sprouts, per ½ bus.	4 0 —
Cabbages, per tally	8 0-10 0
Carrots, per doz.	2 0- 3 0
Cauliflowers, per tally	10 0-12 0
Celery, per bundle	0 9- 1 9
Cucumbers, per flat	5 0- 8 0
Garlic, per lb.	1 0- 1 3
Horseradish, per bundle	3 6- 4 0
Leeks, per dozen	1 6- —
Lettuce, round, per doz.	1 0- 1 3
Marrows, per tally	10 0 —

	s.d. s.d.
Mint, per doz.	2 0- 4 0
Mushrooms, cultivated, per lb.	1 6 —
— Buttons	1 6 —
— Field, per bus.	2 6 —
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per bus	2 6 —
Parsley, per dozen bunches	1 0- 2 0
Radishes, per doz.	0 9 —
Sage, per dozen	2 0- 4 0
Spinach, per bushel	1 0 —
Tomatos, English, per doz. lbs.	2 6- 3 0
— seconds	2 0- 2 3
Thyme, per dozen bunches	2 0- 6 0
Turnip, English, per dozen bunches	2 0- 3 0
Watercress, per doz.	0 4- 0 6

Remarks.—Supplies show a falling off generally, and there is an advance in prices.—*E. H. R., Covent Garden, September 30, 1914.*

New Potatos.

	s. d. s. d.		s. d. s. d.
Bedford	3 0- 3 0	Kent	3 3- 4 0
Blackland	2 9- 3 0		
Lincoln	3 0- 4 0	Essex	3 0- 3 6

Remarks.—Trade is very quiet, and only tubers of best quality are in demand. The supply is plentiful. Prices are about the same as last week.—*Edward J. Newborn, Covent Garden and St. Pancras, September 30, 1914.*

Obituary.

Frank Cypher.—We regret to announce the death, at his home late on Saturday, September 26, at the age of 48 years, of Mr. Frank Cypher, the youngest son of the late James Cypher, and partner with Mr. John Cypher in the firm of J. Cypher and Sons, Exotic Nurseries, Cheltenham. Deceased had always enjoyed good health, was a strong, active man, and a hard worker. He suffered an attack about three weeks ago, and died from cerebral haemorrhage. He was greatly esteemed.

Samuel Chapman.—We regret to record the death, on the 17th ult., of Mr. Samuel Chapman, of Northridge Gardens, Boxmoor, Hertfordshire. Mr. Chapman, who had been unwell for the past twelve months, was gardener to N. Micklem, Esq., K.C., for the past twelve years. He was a successful exhibitor of fruits and Chrysanthemums, and won many prizes when in the service of the late Sir Edward Walter, Sarisbury Court, Southampton.

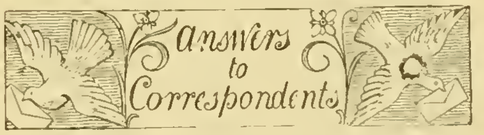
Samuel Horscroft.—Mr. Samuel Horscroft, gardener to A. J. Morris, Esq., Court House, Banstead, Surrey, died on the 19th ult., after a long illness, aged 63 years.

W. Iggulden.—We regret to learn from the *Journal of Horticulture* of the death of Mr. W. Iggulden, who for many years was head gardener to the Earl of Cork at Marston House, Frome, and subsequently was engaged at the Duke of Bedford's experimental farm, and the Countess of Warwick's school for women gardeners. Some years ago he commenced business with another gentleman as the "Frome Fruit and Flower Company," and he was manager at the time of his decease, which occurred on September 20 at the age of sixty-three years.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. H. J. Baldwin, for the past 2 years Foreman at Highnam Court, and previously at The Warren House and Waddesdon Manor, as Gardener to the Hon. Lady Egerton, Chilton House, Thame, Oxfordshire. [Thanks for 1s. for the R.G.O.F. Box.—Eds.]



Answers to Correspondents

Ants in a Greenhouse: *C. D. H.* These creatures are very troublesome in plant-houses, not only feeding on the ripe fruit, but spreading by various means such pests as mealy bug and aphis. If the nests are in convenient positions, boiling water should be poured over them, or a little bisulphide of carbon, or Vaporite, injected. A good remedy is also prepared by Messrs. Cross and Sons, of Glasgow, called Ballikinrain Ant Destroyer. It is poisonous, and should be used with the utmost care.

Calcium Chloride for Binding a Tennis Court: *H. H.* The usual proportion of the calcium chloride employed is about 1lb. per gallon, but it may be applied at double that strength at first. Certain surfacing materials bind quicker than others, and personal observation and judgment will determine what quantity to employ. If there is any difficulty in applying the solution with a watering-can the granulated chloride may be put on dry and watered in with a hose, using a light spray.

Here again judgment must be exercised. From 2½ to 3 cwt. will be necessary at first. The chloride is supplied in drums of 5 and 10 cwt.

Chrysanthemum Foliage: *T. A. S.* The injury has been caused by aphides. Spray the plants with an insecticide.

Filberts and Medlars: *R. G. V.* Filberts are best stored on a brick floor and turned over two or three times a week, the slight damp arising from the bricks will keep the nuts from shrivelling. Slight frost does not appear to damage Medlars; consequently these fruits can remain on the trees for some time yet, to be ultimately stored in a dry, frost-proof place.

Flower Beds: *C. D.* As an alternative to the ordinary spring and summer bedding schemes which you do not appreciate we suggest planting the beds with Roses and carpeting the ground with dwarf hardy herbaceous Alpine and other plants. Such a scheme properly managed would provide pleasure and interest throughout the year, permitting, as you evidently wish, the Roses to be the chief feature, and you may still use a proportion of Violas, Carnations and Pinks. The following is a list of suitable perennials. Achillea tomentosa, Agrostemma Flos-jovis, Alyssum saxatile and varieties, Anemone apennina, A. blanda, A. fulgens, A. Hepatica and others, Aquilegias, Arabis albida fl. pl., A. alpina, Armeria vulgaris, A. Cephalotes, Aubrietia (many varieties, this with the two previous genera are especially valuable as edgings), many Campanulas, Centranthus ruber, Chelone barbata, Convolvulus Cneorum, Dielytra (Dicentra) spectabilis, Dodecatheon Meadia, Doronicum Clusii, Erigeron aurantiacus, Geum coccineum fl. pl., G. Mrs. Bradshaw, Helenium pumilum, Helianthemums (many varieties for the sunny side of the beds), Heuchera sanguinea, Iberis gibraltarica, Linum flavum, Lithospermum prostratum Heavenly Blue, Lychnis chalcedonica, L. viscaria splendens plena, Nepeta Mussinii, Papaver nudicaule, Polygonum ambigua, Rudbeckia Newmannii, Veronica spicata and V. incana. To these may be added such dwarf shrubs as Lavender, Rosemary, and Santolina incana, which, by occasional pruning, may be restricted, and very many annuals and spring-flowering bulbs. To be successful with this form of flower garden, in which the beds must be left undisturbed for several years, thorough initial preparations of the soil are essential. The beds must be of good depth and filled with good soil. The addition of manure in quantity is not advisable; this may be given when required in the form of such a proprietary manure as Clay's and well-decayed farmyard manure lightly forked into the surface soil. If the scheme outlined is adopted the proposed sunken garden at the other end of the tennis lawn should not contain Roses, as this would be in a measure a duplication of the flower garden. We would rather suggest such a sunken garden as that at Hampton Court, or that at Ball's Park, which was illustrated in the *Gardeners' Chronicle* for March 21 last. In the absence of a scale on your sketch plan we cannot express any opinion concerning the size of the beds in relation to the grass, except that it appears as though the four long beds are of undue length in proportion to their apparent width. As a beautiful picture is enhanced by a frame of goodly proportions, so the flower garden gains in attraction when the beds are surrounded by ample greensward.

Fruits for an Unheated House: *Enquirer, Roxburghshire.* As you have sufficient Peaches and Nectarines Jefferson Plum is one of the best fruits for your purpose, but, like all other fruit trees, it is subject to infestations of insects. From your remarks we suspect that your culture is at fault and that the trees have suffered particularly from want of water at the roots. If not that, then the soil and drainage should be examined. Why start the fires in February "till the weather is warm"? Far better allow the trees to develop slowly, and use fire heat in cold weather only when the blossom is out, or when frosty or during a period of cold rain. You will find a less artificial treatment best, and do not forget that Peaches are singularly liable to be affected by red spider on the foliage.

Maggot in Cinerarias: *Constant Reader.* We suspect that you refer to the leaf miner, which cannot be destroyed by spraying, but should be pinched between the finger and thumb, or pierced through with a needle. Send a specimen for examination.

Melon Diseased: *G. W.* The disease is caused by the fungus Botrytis, which is favoured by excessive moisture in the soil and atmosphere. There is no remedy for plants and fruits that are attacked, but the trouble may be minimised by admitting plenty of air when the weather is favourable.

"Muscat" Grapes: *H. F. C.* The disfigurement on the berries is superficial, and not due to organic disease. It may have been caused by rubbing the bunches during thinning, or by excessive sunshine.

Names of Fruits: *A. L.* The characteristics of Olivier de Serres are very pronounced, and we cannot believe that a mistake has been made. Please send another specimen.—*H. B.* 1, Kentish Fillbasket; 2, Tower of Glamis; 3, Washington; 4, Baldwin; 5, Cellini; 6, not recognised; 7, King of the Pippins.—*D. W. M.* 1, 2, and 3, Williams' Bon Chrêtien; 4, 5, and 6, Beurré d'Amanlis.—*C. H. E.* 1, Cox's Pomona; 2 and 11, Stirling Castle; 10, not recognised; 12, Small's Admirable; 21, Lord Burghley.—*Thorough.* 1, Apples Lord Suffield; 2, White Astrachan; 3, Pears Conseiller de la Cour; 4, Marie Louise; 5, not recognised; 6, Beurré Hardy.—*J. J. F.* We think you are right in judging the Apple to be a poorly-coloured specimen of Mère de Ménage.

Names of Plants: *R. G.* 1, Cornus alba; 2, Garrya elliptica; 3, Hieracium aurantiacum.—*J. G.* 1, Sedum spurium; 2, S. album; 3, S. rupestre; 4, Polemonium coeruleum; 5, Artemisia vulgaris.—*J. E.* Anemone japonica.—*W. A. T.* A rayless condition of some species of Chrysanthemum. Too scrappy to be identified.

Peach and Nectarine Trees Not Fruiting: *R. D. K.* You do not say whether your cool orchard-house is a lean-to or a span-roofed building, nor do you indicate its aspect—particulars which would have made it easier for us to advise you on the subject of your trees. You state that the Nectarines for the most part dropped before swelling, and that those fruits which did swell rotted at the crown and apex. This might be due to the soil being too wet, and the air too moist during the earlier stages of development of the fruit. The condition, and especially the drainage, of the soil should be thoroughly examined, and if the border is found to be in an unsatisfactory state the following procedure should be adopted. Remove the soil right down to the roots, and rectify defective drainage. There should be at least three or four inches of drainage, consisting of brick-rubble or clinkers, broken finely at the top. Over this should be laid thin turves, grass side downwards, and over the turves, fresh compost consisting of fibrous-loam, horse-droppings, and lime-rubble or wood-ash in the proportion of five barrowfuls of loam to one barrow of each of the other ingredients. To this add a bushel of soot, the whole being well mixed before being placed in the border. If the trees are lifted while this operation is being performed the roots should be wrapped in damp cloths, and the trees should be heavily shaded overhead both before and after being replanted, and syringed two or three times a day in sunny weather. This treatment will tend to retain the foliage for as long as possible. When replanting spread the roots evenly over the compost, and cover them with 4 or 5 inches of the same mixture, afterwards giving a surface dressing of horse-droppings or other manure, and watering the border to settle the soil about the roots. If your house is span-roofed, we presume that it runs north and south, and that the trees are trained on trellises on the east and west sides, in which positions they should yield satisfactory results. The trees should be trained in a fan shape, not as espaliers. They should be well thinned, the best time for pruning being the present, since early pruning ensures that next year's fruit-bearing shoots obtain a certain amount of the light and warmth still available for the better ripening of the wood. Enough of the old wood should be removed to make room for an adequate number of this year's fruit-bearing shoots. These should be trained about 4 or 5 inches apart. This will allow room for one young shoot to be placed between two of this year's growth when the trees are trained next spring. Disbudding should be done in the spring, freely, but with discretion, retaining the growths near the base, and the operation should be extended over a week or ten days at least.

Pear Injured: *J. P.* The Pear is attacked by a fungus (Venturia inequalis) known as "Apple Scab." A means of combating the disease is to spray with Bordeaux mixture at three different periods: First, when the flower buds begin to open; next, when the petals are falling; and again when the fruits are about the size of a large Pea. If the season is wet it is as well to apply the remedy a fourth time, about twelve days after the third. The dilute form of Bordeaux mixture should be used, as the ordinary mixture is apt to scorch the foliage.

Plumbago capensis: *J. P.* Your plants of Plumbago capensis are injured by scale insects. Spray them with a mixture of soft soap and paraffin suitably diluted with water.

Polyanthus Dying: *H. B.* The trouble is at the roots, which have been injured by the fungus Thielavia basicola. Treat the soil with lime. Affected plants cannot be saved, and should be destroyed by burning.

Roses Diseased: *F. Judd.* The disease is known as "rust," and is due to the fungus Phragmidium subcorticatum. Spray the plants with Bordeaux mixture at half the usual strength, and be careful to remove and burn all diseased leaves.

Scurf on Potatos: *G. C.* The injury to the skins of your Potatos, known as "scurf," is a mechanical one, due to the soil becoming caked and unyielding when the tubers are young. Endeavour to make the soil lighter by incorporating with it such materials as grit, lime-rubble, leaf-mould, or manure not too far decayed.

Strawberries Unhealthy: *A. W. T.* The trouble is due to eelworm at the roots. There is no cure for affected plants, which should be burnt. Treat the soil with quicklime.

Tennis Court for Winter Use: *Constant Reader.* A court such as the one described in the issue for August 8, 1914, p. 124, would be suitable for use in winter. The only other alternative is a covered court, that is, one in a large building, such as a hall.

Twin Apples: *E. W. P.* Twin Apples are not uncommon; such fruits are due to two flowers having become fused. The abnormal condition is known as syncarpy, and it occurs in many kinds of fruits.

Weed-killer for Walks: *A. T.* The best plan would be to obtain one of the many good and effective weed-killers on the market, such as Bentley's or Mark Smith's; but if you prefer to make your own the following recipe is a good one:—In three gallons of cold water dissolve a pound of powdered arsenic. Boil this solution, stirring it well all the time. Add seven gallons of cold water and two pounds of powdered soda, still stirring, and bring again to the boil. The mixture will then be ready, and should be applied to the walks with a fine-rose can in dry weather. The ten gallons should be sufficient for about twenty-five square yards. Another recipe consists of carbolic acid diluted in the proportion of one ounce to five pints of water, applied through a fine-rose can. This will destroy ants and other insects as well as weeds.

Communications Received. — A. Bruce J.—W. Honess—W. R. D.—E. H. D., Denmark—Sir W. S.—F. C.—G. A. U.—A. C. B.—R. A. W.—S. A.—B. of A.—Dr. H. E. D.—W. H. W.—R. B.

THE
Gardeners' Chronicle
No. 1,450.—SATURDAY, OCTOBER 10, 1914.

CONTENTS.

Apples, naming 253
Barbados fruit crops .. 252
Bastard trenching .. 250
Begonia Altrincham Pink 250
Books—
  Botanical Magazine .. 252
Chamberlain, the late Mr., and Kew Gardens 247
Chrysanthemums in the L.C.C. Parks 251
Coombe Wood Nursery, sale at 251
Dahlia conference, forthcoming 251
Edinburgh Chrysanthemum show . .. 251
Euphorbia, reversion in 253
Farm produce for the Forces 251
Flowers in season .. 253
Fruit trees, treatment of 245
Grafted Apple, curious behaviour of a .. 253
Graire, M. Henri .. 250
Inula acaulis 246
Liverpool, a new park for 252
National Relief Fund .. 250
Obituary—
  Arderne, H.M. .. 256
  Donoghue, J. F. .. 256
  Herd, W. A. 256
  Veitch, John Gould .. 256
Orchid notes—
  Oncidium Leopoldianum 246
  Odontioda Diana .. 246
  Odontoglossum Uro-excellens 246
Peach, fruits of the double-flowered .. 253
Potato, a blight and frost resisting .. 250
Potato competition at Edinburgh 251
Potato seed for Belgium 252
R.H.S. meetings .. 250
Societies—
  Debating 255
  National Chrysanthemum 255
  Royal Horticultural .. 253
Trees and shrubs—
  Summer-flowering Ceanothuses .. 246
War items 251
Week's work, the—
  Flower garden, the .. 249
  Fruits under glass .. 249
  Hardy fruit garden .. 248
  Kitchen garden, the .. 248
  Orchid houses, the .. 249
  Plants under glass .. 249
White City, awards at the 251
White, Mr. W. H. .. 252

ILLUSTRATIONS.

Apple, curious growth on a grafted 253
Begonia Altrincham Pink (Supplementary Illustration).
Ceanothus Aramis 247
Dahlia Canopus 254
Inula acaulis 246
Potato competition at Edinburgh 251
Veitch, John Gould, portrait of the late 256

THE SPRING - SUMMER - AUTUMN TREATMENT OF FRUIT TREES.

PRUNING and training are handmaidens each to the other, yet how little does the question of training appear as part and parcel of the pruning processes! Many are the definitions of the process of pruning that have been put forward, and I do not wish to add another when I write that, in conjunction with training, the object is not only to engender fruit production, but to have the fruit produced where it will receive good exposure to light and air, and to secure that the tree may be of a form that will economise time and material when pruning, fruit-thinning, and especially spraying, have to be done; moreover, the fruit should be borne close to stout main branches, so that loss in the form of windfalls may be reduced to a minimum.

In this country, except for horizontal palmettes (which we are generally pleased to call "espaliers"*), cordons (oblique and horizontal), and the more or less irregular fan, there is little or no attempt to establish symmetry in our fruit trees. Yet one cannot help thinking that our Continental neighbours must be right in insisting upon the equal distribution of sap and the equal distribution of burden, both of which are linked to equalisation of exposure to light and air. Inspection of a considerable number of plantations on this and on that side of the Channel leads me to the generalisation that here we follow a sort of happy-go-lucky course, and allow a tree to branch where and whither it will, until such branch becomes obstructive, when off it is lopped, often leaving a large and unhealable wound which remains open to the access of canker and other fungi. On the other hand, in many French (and I believe German) plantations, we see trees which have been guided to useful shape in their early life, so that the labour and injury involved in the removal of large branches may be avoided. Let any reader look at our bush, half standard or standard plantations, and he will be sure to see thin, over-laden branches, risking breakage, vis-à-vis to stout, strong ones with hardly a fruit upon them, though so well able to bear the burden. Moreover, let him ponder on the time and thought required when pruning such trees, with irregular branches of all sizes, the difficulty of getting at parts of the tree, whether for pruning or fruit-thinning, without risk of injuring valuable fruit spurs, or even knocking off actual fruit; and let him make comparison with a simple open type of symmetrical growth, where one branch is like another. Here be it noted that I have not in mind such fanciful forms as corkscrews or those requiring artificial supports, but rather the symmetrisation of the proper pyramid ("quenelle"), half standard or standard; thus Pekrun writes: "Away with the bush form." That our ideas are less advanced than those of our neighbours in the matter of training may be exemplified by the fact that a year or two back I wrote to one of our leading nurserymen for some young trees to train; I received young bushes with all conceivable sizes of irregular branches, not one even with a decent straight leader; in a word, they were only fit for planting on a bonfire. The prime need is to start with a straight maiden bearing a single shoot. After hearing my criticisms of our training ideas, a friend invited me to see some trees which he had just obtained from one of our most celebrated nurserymen, and with which he was much pleased; some were double horizontal cordons, some were horizontal palmettes; whilst the former shape seems quite "tabooed" as a practical form abroad, in neither case did it need a pair of callipers to show the inequality of the paired branches, none of which was level in its origins. Again our vocabulary is poor; where are the simple equivalents of "Charpente," "Brindille," "Coursonne," "Lambourde," etc.? There is an apocryphal tale of a visit to a French garden, where highly trained and wondrously formed trees were seen devoid of fruit, of which the supply was obtained in a ramshackle grow-as-you-please back garden. This is certainly not my experience, for I have seen the most marvellously fantastic forms laden with fruit, and that, too, of fine quality.

La Taille Lorette.

Being without the prejudice of our traditional pruning methods, some years ago I formulated the question to myself, "Do we prune at the right time?" Should not we prune whilst the sap is running, so that we may guide it whither we list and avoid large wounds on our trees? Having already commenced to treat some trees on these lines, especially with a view to remedy irregularities of growth and bring each main branch into the condition of a well furnished "cordon," I was more than ordinarily interested to meet with an account of M. Lorette's methods in Vercier's most excellent little book. I set about getting Lorette's own account of his procedure, and determined to visit his plantations as soon as opportunity would permit. The plantations are situate at Wagnonville (Nord), and are (or were) easily reached by way of Calais, Lille, Douai. At Douai there is an excellent hotel, whence a walk of about a mile brings one to Wagnonville. I selected the middle of June as a good time for my visit, when the third pruning is in progress, and M. Lorette gave up his morning to demonstrate his ways. I need hardly assure my readers that they will be received most cordially if all is well after the war. The trees were studded with swelling fruit, except, of course, the infants, and two others which were thought to have been caught by frost, though, from the history, thoughts of defective pollination passed through my mind. For details I must refer to the second edition of M. Lorette's book,† which received notice in this journal April 11, 1914, p. 249.

As Mr. Bunyard has hinted in his review, it sadly needs re-writing, although the second edition is a great improvement over the first, and he demonstrates the desirability of a clear, concise account by having himself fallen into two vital errors in his short exposition. A lucid account accompanied by simple diagrams of the different branch productions and their treatment during each month is the great need. M. Lorette is too preoccupied to show the results rather than the mode by which these results have been obtained; such an account is to be found in M. Vercier's *Arboriculture Fruitière* (Hachette et Cie., 3f. 50), a work which, with the companion volume, *Culture Potagère*, should be on every gardener's bookshelf. But in regard to the subject before us, even this does not seem to me to be entirely in accord with the master's words.

Apples and Pears.

The two great principles of Lorette's method are: (1) Only prune when the sap is running, and (2) awaken and utilise the stipulary eyes.

Thus winter pruning is entirely abandoned, with one slight exception only, namely, superabundant fruit buds may be removed in November. The shoots obtained from stipulary eyes are used both for forming the tree and obtaining fruit. The calendar of operations is shortly thus: April/May, shorten leaders; May/June, cut back sufficiently developed laterals either "sur empâtement" (vide infra for explanation), or to one or three good eyes; June/July and July/August, continue the treatment on the shoots ("bourgeons") which have sufficiently developed and the new shoots which have arisen from the previous cuts. September, cut away everything down to well-developed fruit-buds, thus only small twigs (brindilles), half developed fruit twigs (dards) and fruit-buds remain. The exact dates depend upon the weather, especially in August and September when, if the season be wet, pruning is delayed some few days. It will be noted that the cutting is not a reckless shortening of all shoots to the same degree, but each is cut when sufficiently developed, and according to its circumstances. A shoot (" bourgeon ") is judged to be ripe for pruning when at the point of cut it is fairly lignified, but still somewhat juicy, and about 9 to 12 inches long. By the book, a shoot should be the "thickness of a pencil," but M. Lorette tells me that this is to be regarded as a general rule *only in the process of forming a tree*, and it will be patent that one might wait a year or so ere some of the more delicately growing sorts attained this diameter. *Herbert E. Durham, Sc.D., M.B., F.R.C.S., President of the Hereford Association of Fruit Growers and Horticulturists.*

---

* In French, an espalier is a tree trained to any form against a wall, whilst one trained to supports in one plane in the open is a contre-espalier; so perhaps most of our "spaliers" should be called "counterspaliers."

† *La Taille Lorette*, par Louis Lorette. Bibliothèque du Journal *Jardinage*. 2me. édition. Versailles, 1914. 3f.50.

(*To be concluded.*)

INULA ACAULIS.

This rare and beautiful plant (Inula acaulis), see fig. 97, is a native of Macedonia. It rarely exceeds 1 inch in height, and makes a delightful subject for a well-drained, sunny nook in the rock garden. It forms mats of small, deep-green foliage, studded from June to August with almost stemless, golden flowers, each 1½ to 2 inches in diameter, each resembling a miniature Sunflower. The foliage of well-grown plants is almost hidden in the flowering time. The photograph was taken during the early days of flowering, and shows how successfully this dainty plant is grown at Warley Place, in Essex Provided the soil is open and well drained, and the slugs are kept in check, this Inula does not seem to be a difficult plant to grow; my own experience suggests the advisability of "splitting up" the creeping rootstock (which roots freely) immediately after flowering, otherwise the plant may lie during the winter. *R. A. Malby.*

ORCHID NOTES AND CLEANINGS.

ONCIDIUM LEOPOLDIANUM.

With reference to this distinct and pretty Oncidium, which was shown for the first time by H. S. Goodson, Esq., Fairlawn, West Hill, Putney (gr. Mr. G. E. Day), at the Royal Horticultural Society's meeting on July 28 last, we are now able to record that the small batch of which it was one was collected by Mr. Kromer at Calaveras in the Moyabamba district, Peru. The plants which came at the same time were Cattleya Rex, the best form of white Anguloa, and Oncidium Krameri. They were taken to Iquitos, repacked and sent off in May, 1908, but only a small proportion survived the journey.

There is no conclusive evidence that O. Leopoldianum, and O. corynephorum with which it was said to be synonymous, grow actually together, although they probably grow in the same district. The species O. Leopoldianum was named for Messrs. Linden from dried specimens, but the plants which were supposed to be of the same species proved to be O. corynephorum, and no true O. Leopoldianum appears to have flowered out of the batch, the first to appear being from the more recent importation, out of which no O. corynephorum has been recorded.

Both the species mentioned have trailing growths of very great length, and when collected for packing to send home only 2 feet or so with three or four pseudo-bulbs are taken. Consequently the plants receive a check, which accounts for their taking several years to flower. When established, however, they may bloom more freely.

O. Leopoldianum, with its ally O. corynephorum, was illustrated in the *Gardeners' Chronicle*, August 1, 1914, p. 99.

ODONTIODA DIANA.

The raising of Odontiodas may certainly be counted amongst the valuable services the hybridists have rendered to Orchid cultivation, for their scarlet, red and white and variously coloured flowers brighten the houses all the year round. But beautiful as they all are, some few may always be cited as superior to the rest. The forms of O. Bradshawiae are invariably good. O. Charlesworthii for a deep red still holds its own, and the type variety O. Vuylstekeae, with its branched spikes of pretty red and white flowers, is excellent.

Odontioda Diana (Cochlioda Noezliana × Odontoglossum amabile), raised both by Messrs. Charlesworth, and by Messrs. J. and A. McBean, who have had specimens of it in bloom for months, and consider it the best of the late-flowering dark scarlet Odontiodas, is a valuable addition to the class.

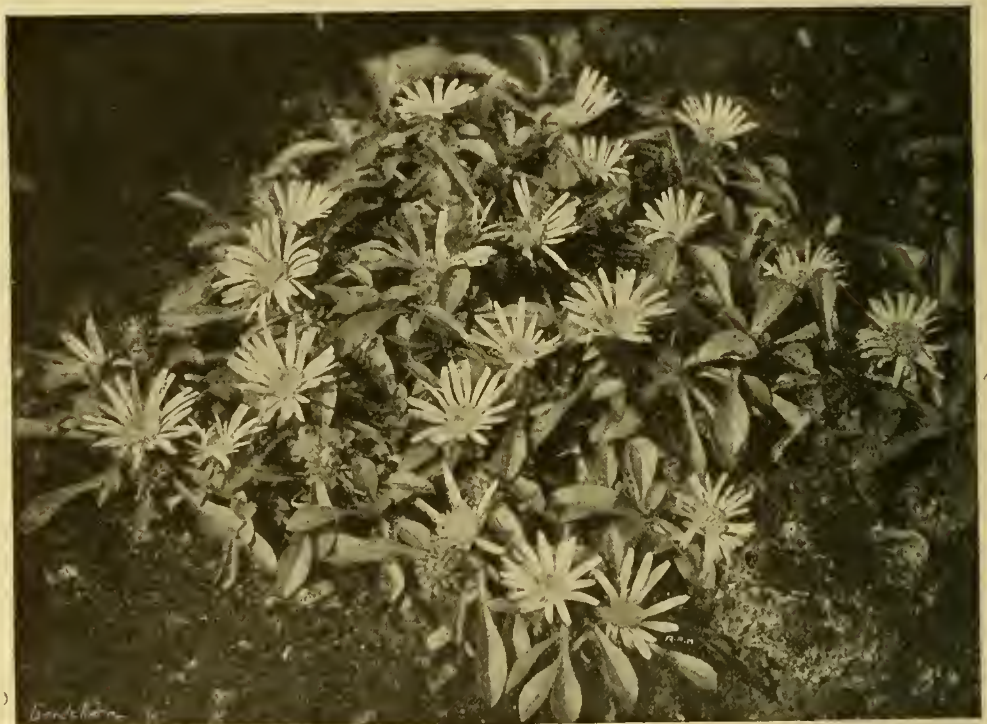


Fig. 97.—Inula acaulis: flowers yellow.

ODONTOGLOSSUM URO-EXCELLENS.

A new and interesting cross between Odontoglossum Uro-Skinneri and O. excellens (triumphans × Pescatorei) has flowered in the collection of Richard Ashworth, Esq., Ashlands, Newchurch, Manchester, whose gardener, Mr. W. Gilden, kindly sends a flower. The bloom, which is pretty and of unusual shape, is about 2 inches across, and in substance and arrangement of the segments shows the influence of O. Uro-Skinneri, but the colouring more nearly approaches that of the other parent. The sepals are pale yellow with several large, red-brown bars; the petals also are yellow blotched with red-brown, and the broad labellum is cream-white with dark rosy-crimson blotches, and a row of irregular rose spots inside the margin. The column is white, stained with purple on the face and spotted with red on the back.

TREES AND SHRUBS.

THE SUMMER-FLOWERING CEANOTHUSES.

The Ceanothuses are easily divided into two distinct groups from the manner of their flowering. In some the blossoms are produced from buds matured on the previous year's wood, or from short axillary growths on mature wood, whilst in others the flowers terminate the current season's growth. Thus we have two distinct periods of flowering, necessitating different methods of culture. Those which produce their flowers from the old wood flower between April and the end of June, the earliest species being C. rigidus, and perhaps the latest C. thyrsiflorus. Most of them are rather tender, and they are usually planted against walls. This necessitates severe pruning, and the time to prune is directly the flowers fade. The group only contains species and botanical varieties, and in this matter is quite unlike the other set in which species are few and garden hybrids and varieties numerous.

Those which bloom on wood of the current season have a much longer flowering time than the others, for, whilst the early ones last in good condition at the longest for a period of two or three weeks, the later flowering sorts produce their blossoms over a period extending from early July until October. They are hardier than the early kinds, and in the Midlands and south and west counties of England, in Wales, Ireland, and west Scotland, they are well adapted for planting in groups or beds on lawns or in other prominent positions. During mild winters, and in the warmer parts of the country, the leaves may be retained for the greater part of the winter, but the late-flowering sorts are not so decidedly evergreen as most of the species which bloom in spring, and in many gardens they are deciduous.

Provided severe frost is not experienced during winter, the late-flowering Ceanothuses are not difficult shrubs to cultivate. They are increased easily from cuttings inserted during July or August, in sandy soil, in a close frame shaded from bright sunlight. A rather light, rich, well-drained loam forms the most satisfactory rooting medium, and pruning consists in cutting back the old shoots each spring. Weak shoots may be removed to within a bud or two at their base, those of greater vigour being left six or eight inches long. Now and then an old branch may be cut away provided a young one from near the ground can be trained in its place, for the best flower-heads are borne on strong, young shoots. Pruning may be carried out in February, but it is not wise to prune earlier, for the points of the branches act as a slight protection to the tree during times of frost. The faded flowers should be removed before seeds form.

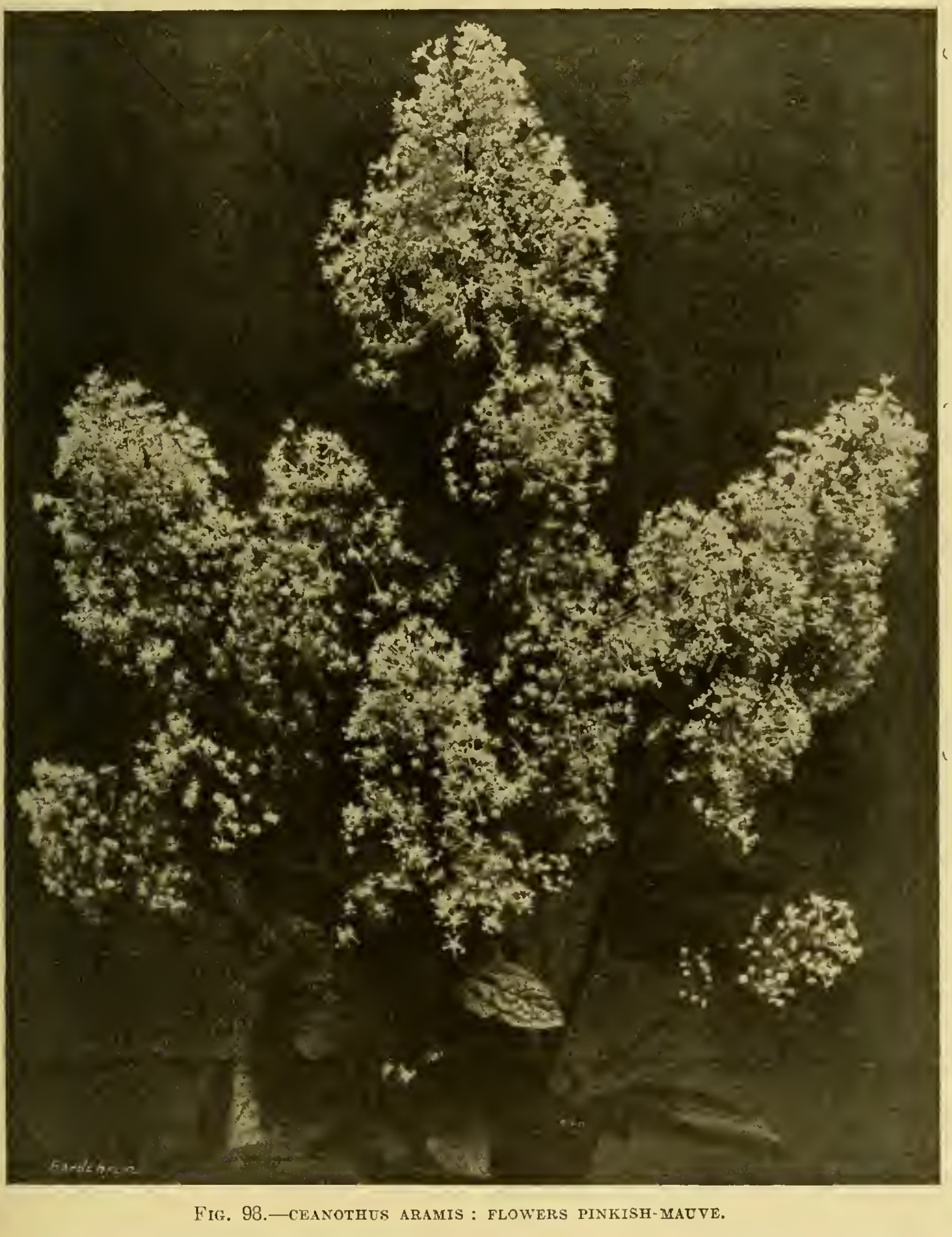


Fig. 98.—Ceanothus Aramis: flowers pinkish-mauve.

The species which are most closely related to the late-flowering Ceanothuses are C. americanus and C. azureus.

The first-named is a native of Eastern N. America, where it has a wide distribution, and occurs in a variety of forms. It was introduced to this country about 1713, and forms a bush from 1½ to 3 feet high; the ovate leaves are 1½ inch to 2½ inches long, and the moderately sized heads of white or sometimes pinkish blossoms are succeeded by black fruits. The other species, C. azureus, is found wild in Mexico, where it grows into an upright bush 6 or 8 feet high. It has ovate or oblong leaves up to 3 inches long, and bears large, terminal heads of bright blue flowers.

There are many hybrids, of which Aramis (see fig. 98) is a worthy representative. This and many other hybrids were raised by the late M. Lemoine, of Nancy. The plant is very attractive by reason of its large inflorescence of pinkish-mauve flowers, which appear in profusion from July and last until towards the early part of October.

The specimens illustrated were shown by Elizabeth Lady Lawrence, Burford, Surrey (gr. Mr. Bain), at the meeting of the Royal Horticultural Society on the 22nd ult.

One of the best known varieties is Gloire de Versailles, which is remarkable for its vigorous growth and large, upright panicles of rich blue flowers. The variety is often planted against walls, and grows 10 or 12 feet high. Gloire de Plantières is another very free blue-flowered variety, somewhat like the last-named. The variety albus plenus has double white flowers, but is less attractive than some others, although useful for variety. The large heads of purplish-blue flowers of atro-coeruleus purpureus are very showy. Bijou and Boule Bleue are varieties with moderate-sized heads of grey-blue flowers; Brilliant has violet-purple blossoms; Indigo, with deep blue flowers, is distinct in shade; Cérès and Coquetterie have rose and carmine blossoms respectively; Georges Simon bears rosy-lilac flowers; the flowers of Gladiateur and Perle Rose are rose coloured, the last-named being specially good; Lucie Mosen bears dark blue flowers; whilst those of both Marie Simon and Mina are rose. Palmyre is rose coloured, shaded with violet; and Sirius bears blue flowers.

There are many others, but those mentioned include the best, and from them a good selection can be made. *W. D., Kew.*

THE LATE MR. CHAMBERLAIN AND KEW.

Sir William T. Thiselton-Dyer contributes (in *Kew Bulletin*, No. 7, 1914) the following valuable article on the late Joseph Chamberlain. In this contribution is indicated the great and discerning interest taken by that statesman in the Royal Gardens, Kew:—

"Amongst the tributes of memory called out by the passing of the great statesman Kew cannot be silent. For it owed to him, as to no other of our time, stimulus, encouragement and support. In his beautiful home at Highbury he found recreation in his garden from the labours of a strenuous political life. It was not the mere indulgence of a man of means; as with everything else it bore the impress of his own personality and practical ingenuity. An extensive range of glass was incorporated with the house; no outside pilgrimage was needed to visit it. An ample winter garden was a pleasant meeting ground for the family and its guests. Out of this opened a corridor with houses on either hand. A button by the side of each plate-glass door illuminated at night with electric light the interior display. These may seem trivial details: they are not so; they brought Mr. Chamberlain's favourite pursuits into the intimacy of his life. He took no exercise, nor did he find distraction in sports or games. Yet it was a fundamental principle with him that every man, however absorbed in the main pursuit in life, should find a hobby in something wholly remote from it. The physiological implication is sound; for distraction is rest, though not somnolent. Far from it: Mr. Chamberlain knew his plants; their origin and history were recorded in his garden books with his own hands. It may seem a paradox; but the man who could hold a vast meeting spellbound was perhaps not less happy amongst his plants in a garden apron with a short pipe. Yet the secret is the same; he was above all things human. There have been statesmen in the past whose humanity needed some palliation.

"It has been well said that the principle which animated Mr. Chamberlain's public life was desire for the welfare of the people, the nation and the race. As he passed from one field of activity to another that principle simply took a wider scope. In a wholly unofficial way it influenced his interest in Kew. To him, apart from its scientific aspects, it was the national garden. He was jealous that it should be up to the high-water mark of horticultural enterprise. But this requires now and again a generous expenditure possible to a possessor of private means, but not to a government establishment. The reason is that the one has a 'margin,' the other has not. It cannot be complained that Kew, in all essentials, is not liberally maintained; but every item of expenditure is earmarked, and there is no room for an occasional however judicious extravagance. And this applies equally to other establishments maintained by the State, such as the British Museum and the National Gallery.

"Mr. Chamberlain wanted the people to have the enjoyment at Kew of the best that a rich man could afford, and at least in one instance he helped it to circumvent the difficulty. He insisted that Kew should take up the cultivation of the splendid hybrids of Hippeastrum. These are costly to buy, and few private gardens can supply the special means for growing them successfully. Lieut.-Col. Sir George Holford, at

Westonbirt, is without a rival in this respect, and is the possessor of a strain of exceptionally brilliant colour. To him Mr. Chamberlain appealed, and Sir George arrived one morning at Kew unexpectedly in a hansom cab laden with a noble burden of bulbs from his own collection. This gave Kew a start, and with some difficulty a house was adapted to grow them. Mr. Chamberlain had himself purchased from Messrs. Veitch at the price of £25 a single bulb of Grand Monarch, a cross of exceptional merit: he allowed Kew to breed from it, and the result was Sir William and its progeny, a race with large flowers of splendid colour.

"Kew possesses a collection of Orchids which from a scientific point of view has no rival. It has been built up by the energy and cultural skill of the present Curator. Mr. Chamberlain thought that more concession should be made to popular taste in growing showy kinds of no more than horticultural attraction. Kew cannot afford to give a thousand guineas for an Odontoglossum, nor can it be expected to reflect every whim of passing fashion. Mr. Chamberlain contributed Dendrobium hybrids, the result of crosses made with his own hand. It must have been a gratification to him when in 1913 the munificence of Sir George Holford again realised his larger aim, and the Kew Orchids can now appeal equally to the eye and to the intellect. It must not be supposed that in such matters his own taste was otherwise than refined and catholic. He had a wide knowledge of cultivated species. His 'button-hole' was no affectation, but a note of affection for the plants from which official life kept him aloof. One night in the House of Commons the late Lord Avebury, then Sir John Lubbock, also appeared with an Orchid in his button-hole. Mr. Chamberlain at once pounced upon it as something unknown to him. It was our native Butterfly Orchid which Sir John had gathered that morning in his woods at High Elms. It is not trivial to touch on these matters. In drawing a portrait the small touches are at least as significant as the large outlines. Mr. Chamberlain's aim was throughout consistent; he desired that the splendour of a garden should not be the privilege only of the rich.

"But he rendered an even greater service to Kew. The Great Temperate House was projected in 1855 by Sir William Hooker. It was designed as it now stands by Decimus Burton. In 1862 the central portion and the octagons were finished. These were erected on a raised terrace on which space had been provided for the two wings. Their erection was, however, indefinitely postponed in 1863, although the foundations had been partially laid; part of the ironwork lay in the contractor's yard for many years, and was eventually broken up. The derelict condition of the terrace attracted Mr. Chamberlain's attention, and he asked for an explanation. He urged that the completion of the original design should be proceeded with. The First Commissioner of Works (now Lord Gladstone) assented, and an estimate was prepared. When presented to the Chancellor of the Exchequer he at once put his pen through it, with the remark, 'A nation that requires a fleet must do without a greenhouse.' Sir William Harcourt, however, yielded in 1894 to a personal appeal from Mr. Chamberlain. Himself no mean gardener, the concession was perhaps not extorted very reluctantly. But it is at least certain that no one else could have obtained it, and Mr. Chamberlain was unaffectedly pleased at succeeding. In 1899 the work was completed; thirty-nine years had elapsed since its commencement. The new wings gave Kew what it had long wanted—a house for Himalayan plants and one for those of warm temperate countries.

"In 1895 Mr. Chamberlain, with a change of Ministry, became, perhaps somewhat to his surprise, Secretary of State for the Colonies. This is not the place for political history. But he brought to the vast field of Imperial affairs the same spirit which had animated him in a more limited sphere. No detail was too insignificant for his attention. It is common knowledge that he raised the work of the Colonial Office to a position of distinction and efficiency which it had reached under no previous Minister. He had the gift of carrying with him the enthusiasm of all who worked under him. His personal relations with the cultural work of Kew became less intimate, for, as he said, 'When a man is a Cabinet Minister, he can see little of his friends.' But he made ample use officially of another aspect of its work as the adviser of the Government in all that concerns botanical enterprise in the Colonies.

"One of the earliest questions to engage Mr. Chamberlain's attention was the depressed conditions of the West Indies. Their staple industry, the production of cane-sugar, had become unprofitable owing to the competition of Beet sugar supported by the bounty system. The labourers on the estates thrown out of employment were starving and revenues were dwindling. A Royal Commission of Enquiry, of which Sir Edward Grey and Sir David Barbour, K.C.S.I., were members, was appointed in 1897, and Dr. Morris (now Sir Daniel), the Assistant Director of Kew, was borrowed as expert adviser. As the result of its report a new Agricultural Department was created in 1898, and Dr. Morris left Kew to take up the post of Commissioner of Agriculture. The problem to be faced was not easy. Unemployed labour had to be absorbed; this could only be done by converting it into a peasant proprietary. New staples were introduced, notably cotton, suited to such a system. But the peasants had to be instructed in their cultivation, and Kew was largely drawn upon to supply instructors. Sugar, however, was not neglected; every effort was made in Barbados to raise seedlings which would repay the cultivator by a more productive yield. The result has more than answered expectations; prosperity has been re-established with an increased revenue and an ampler trade.

"In West Africa Mr. Chamberlain had to deal with a similar problem, though from different causes. The enforcement of peace and order necessitated an internal revenue, and this could only be produced by inducing the natives to engage in agriculture. Again the resources of Kew had to be drawn upon. The volume of its official work constantly increased, and in order to facilitate it the Director in 1902 was given an official status at the Colonial Office as Botanical Adviser to the Secretary of State for the Colonies.

"These things, and they are enough to recall, are overshadowed by greater in the public eye. But Kew may say:—

"'Forsan et haec olim meminisse juvabit.'

"It was its privilege to see the human side of a great statesman. What love he could spare from the interests of his country he gave to plants. During his visit to South Africa the Barberton Daisy won his heart, and he brought it back as a personal trophy, hoping to do great things with it at Highbury.

"Let this be for 'Rosemary, that's for remembrance.'"

Publications Received.—*Annual Report of the Bee-Keepers' Association of the Province of Ontario, 1913*; *Crop Bulletin 120, Ontario Department of Agriculture, Bureau of Industries.* Published by the Ontario Department of Agriculture, Toronto.—*Crop Pest Handbook for Behar and Orissa (including alsa Western Bengal).* Issued by Department of Agriculture, Behar and Orissa. Price Rs. 4.—*The Plants of the Bible.* Second edition, revised. Prepared by the American Colony, Jerusalem, Palestine, and published by Fr. Vester and Co., Palestine. Price 1s. 6d. Post free.—*Quarterly Journal of Forestry.* Royal English Arboricultural Society. (London: Laughton and Company, Limited, 3, Wellington Street, Strand.) Price 2s. —*A Guide to Rase Culture.* By G. B. Patwardhan, B.Sc. Bulletin No. 7 of the Agri-Horticultural Society of Western India. Price Rs. 1.80. (A. Shalon and Bros., Israelite Press, Poona, India.)

The Week's Work.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Endive.—Plants intended for use during the winter and spring may be lifted with plenty of soil attached to the roots and placed in cold frames. Endive is very accommodating, and the plants merely require to be placed on the bed of the frame, the leaves touching, and the spaces between the roots filled with leaf-mould or fibre refuse. A sufficient number to meet the wants of five days should be transferred from time to time to the cooler part of the Mushroom house, standing them, as previously, on the floor of the house but without packing material between them. A portion to provide a present supply may be left in the open meanwhile.

Lettuces.—Like Endive, the winter supply of Lettuce may be transferred at any time to frames. The plants should not be fully grown, though nearly so. Space them wider apart than Endive, and bury the roots, but not so deeply as to cover the base of the leaves, or there may be loss from the stems rotting. If water should be required let it run on the surface of the soil without touching the plants. The frames should not be closed unless during frost or rain. Mildew in some seasons is a difficult pest to deal with, but there will be very little trouble from this cause if the ventilation is managed properly.

Soil Cultivation.—Though many gardeners defer the work of digging and trenching vacant ground until the winter, the present month is the best for the purpose. The soil is usually in a good condition for working, being neither too dry nor too wet, and, in a measure, it saves labour induced by a laudable desire for cleanliness in the garden, which is usually met by hoeing and raking the ground vacated by late crops. Moreover, Peas, Beans, French Beans, and other vegetables over for the season, can be hoed up and buried deeply, and their residue, when decomposed, is an aid to fertility. Trenching is preferable to digging, and for ordinary purposes, two spits deep, with the crumbs shovelled from the bottom of the first spit, is a sufficient depth. In fairly friable soil, clods under the surface should be smashed as the work proceeds, leaving the surface rough. The pulverisation of heavy soils can only be partial, and it is a good plan to follow the old-fashioned system of ridging, applying a slight dressing of quicklime to the surface. The first trench should be about six inches wider than those which follow, in order to get the loosened soil out of the way readily. The modern system of keeping the top spit on the surface has nothing to recommend it, for by bringing the bottom spit to the top comparatively fresh soil is secured, whilst the other method is only a little better than simple digging. It is not important to add manure to the soil at the present time; it is rather advantageous to delay its application until early in spring.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Figs.—Figs have done well out-of-doors this season, especially where the important details of watering and mulching have received attention. The Fig not only fruits well in hot, dry summers, but the wood grows hard and short-jointed, so that the shoots are able to withstand severe winters. If the growths have not been stopped and thinned this work should be done at once. The roots of trees growing in borders should not be allowed to touch rich, loose soil or the growth will be rank. Good fruiting wood is always short-jointed and stumpy. In order to ensure such a fruitful habit take out a trench about 3 feet from the stem of the tree and down to the drainage. Cut through all the strong roots that cross the trench, with a view to encouraging the formation of fibrous roots close to the wall. It is a good plan to build a low wall for the purpose of keeping the roots entirely under control; but the next best thing is to fill the trench with crushed clinkers, brickbats, stones and chalk. These materials should be rammed firm as the work proceeds, finishing with a layer of poor soil. This treatment will give the tree a rather severe check, with the result that very little growth will be made the next summer, but what is made will be such as will bear fruit in due course. It is often found that Fig trees growing in small borders against walls close to a hard road or pathway bear satisfactory crops. Such trees make little wood each season beyond a small extension of the shoots. Trees growing in restricted borders and fruiting freely need copious supplies of water and feeding frequently during dry weather.

Planting Young Fig Trees.—When Fig trees are being planted it is an easy matter to arrange for the roots to be restricted and for the soil keeping poor. Enclosing the border in a small brick-pit is one of the best ways of permanently restricting the roots, but it should be borne in mind that there must be efficient drainage. Trees which have been growing in large pots or tubs for some years invariably produce good crops, thus showing that only a small amount of rooting material is necessary. In no case employ rich soil or animal manures. The proper time for feeding Fig trees is when they are bearing full crops. Stimulants can then be applied in liquid form, or as top-dressings, with great benefit both to the tree and to the crop.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Roses in Pots.—Make a thorough examination of the pot Roses to ascertain the condition of the soil and drainage. Plants intended for forcing early should be repotted or top-dressed. The growths of Tea Roses should be regulated and the weakest removed. Place fresh stakes as required, and arrange the growths so that they will be exposed to the sunlight. Young Roses may be removed into pots a size or two larger than the present ones, allowing ample room for watering. Use a compost of three parts turfy loam and one part decayed manure, adding a 6 inch potful of bone meal to every barrowload of the compost. Ram the soil firmly down in potting, plunge the pots in leaves or ashes, and cover the plants with lights to ward off heavy rains. The same treatment applies to Hybrid Perpetuals, except that no pruning should be done other than removing the flower-buds and dead wood. A selection of the best Roses for culture in pots are (Teas): Anna Olivier (orange and flesh shaded), Bridesmaid (bright pink), Devoniensis (creamy-white), Madame Bérard (salmon-yellow), The Bride (white). Hybrid Perpetuals:—Alfred Colomb (carmine crimson), Capt. Hayward (carmine), Fisher Holmes (scarlet), Mrs. J. Laing (soft pink), Mrs. R. G. Sharman Crawford (pink). Hybrid Teas:—Betty, Mme. Edouard Herriot, Lady Derby, and Geo. Dickson.

Early Bulbs.—Examine the earliest batches of Roman Hyacinths and Paper-white Narcissi to ascertain if the plants are in a fit condition to be removed from the bed of ashes in which the pots are plunged. Those that are rooted sufficiently may be placed in cold frames, where they should be shaded from excessive light until the top growths become stronger and green. After a fortnight the best specimens should be selected and placed in a slightly warmer house or frame, but do not practise hard forcing. Let the plants develop slowly and form an abundance of roots. Then they will flower satisfactorily. The shoots of Freesias need some kind of support, which may be provided either by placing small Birch twigs amongst them or three neat stakes around the sides of the pots and enclosing the shoots with two bands of raffia, one 5in. above the pot, the other at the top of the stakes. Admit plenty of air to favour sturdy growth, removing the lights entirely on fine days, and syringe the foliage daily. Later batches should be grown in cool conditions, and the soil must not become dry.

Zonal-leaved Pelargoniums.—A suitable house should be prepared for the reception of the plants intended for flowering in winter. It is an advantage if the house can be devoted entirely to the plants, as they require a fairly dry atmosphere, and a minimum temperature of 53° at night. Space the plants well apart on the stages, and admit air on all favourable occasions. As the nights become colder, and in wet weather, employ a little fire-heat to dry up the superfluous moisture. Continue to feed the plants with liquid manure alternately with a little Clay's fertiliser.

Plumbago capensis.—Insert cuttings of P. capensis and the white variety in small pots.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Zygopetalum Mackayi.—Plants of this useful, late-autumn and winter-flowering Orchid are growing freely, but they should not be watered liberally until the flower-scapes appear. An excess of both heat and moisture would hasten growth too much, with the result that the flowering would not be satisfactory. Take measures to destroy thrips, which would injure the sappy flower-scapes and buds. Sponging is the best remedy. The plants form a vigorous root system, and those that are pot-bound should be watered occasionally with liquid cow-manure after the flower-spikes are well advanced. Repotting may be done directly the flower-scapes have been removed; plants that have failed to flower may be attended to as soon as roots are observed at the base of the new growth. The pots should be filled to about one-third their depth with drainage material. The compost should consist of good fibrous, yellow loam, peat, and broken leaves in about equal proportions, adding plenty of charcoal and sand. Make the compost firm, and finish off with a thin layer of chopped Sphagnum-moss in a growing state. This species of Zygopetalum is in full growth during the winter, and should be placed in a house with a temperature of from 60° to 65°.

Bollea and Pescatoria.—These Orchids are now included under Zygopetalum, but they have no pseudo-bulbs. The plants are growing actively, and forming new roots, therefore it is a suitable time to repot them. The nature of the potting material is not so important as the surroundings; the plants can only be cultivated successfully for a lengthened period where the atmosphere is very warm and humid at all seasons, and they need only subdued light. The plants grow best in well-drained, shallow pans. The compost should consist of about equal portions of finely chopped Sphagnum-moss, peat, and leaves, with plenty of coarse sand and broken crocks intermixed. If the pots are partly plunged in a bed of Sphagnum-moss it will be an advantage, for the moss will help to keep the conditions humid and assist in preventing the spread of red spider when much fire-heat is used. The plants should be well watered as soon as they are potted, and sprayed overhead in the mornings whenever the conditions are favourable. The temperature of the house should be kept as even as possible. A shady position at the warmer end of a house where Phalaenopsis is successfully grown is suitable.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Figs.—After the fruit has been gathered conditions favourable for the ripening of the wood should be maintained. In houses where the second crop of fruits is still ripening use a little fire-heat to maintain suitable conditions and admit plenty of air to develop the best flavour. Water the roots sparingly. Pot trees with unripened fruits may be placed in a warm house or pit; such trees will often furnish a supply of Figs up to Christmas.

Peaches and Nectarines.—If it is intended to make new borders or renovate old ones this autumn get ready a supply of good turfy loam from an old pasture. If the soil is obtained from beyond the neighbourhood of forest trees so much the better, for portions of foreign roots introduced into the border would be liable to breed fungi harmful to the health of the fruit trees. A supply of broken or crushed bricks and old mortar rubble should likewise be got in readiness for mixing with the soil.

Tomatos.—Old Tomato plants may be discarded and the green fruits placed to ripen in baskets on a dry shelf near to the glass in a house where a moderate temperature is maintained with plenty of air. Plants intended for fruiting in winter should be well established and the more forward specimens carrying a truss or two of fruit. Keep the house fairly dry and airy, and the temperature at 58° or 60° at night, with a rise of 10° or more by sun heat during the day. Water the soil sparingly and do not apply stimulants until the pots are well filled with roots. Encourage the roots to grow near to the surface by applying a thin layer of fresh soil mixed with a little bone-meal once every three weeks. This is better than applying manure water frequently, which is apt to sour the soil in winter. Remove all lateral growths as they appear, but do not take off any of the main leaves other than those turning yellow. Directly aphides are detected on the plants fumigate the house, and continue to fumigate occasionally until the pest is eradicated.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Autumn Tints.—One of the glories of the garden in late autumn is the brilliant bronze-scarlet tint of Vitis inconstans (Ampelopsis Veitchii), and the effect is most beautiful when the plant is allowed to grow unrestrained as at Fountains Hall (not the Abbey), Yorkshire. To obtain the richest autumnal colouring the plant should not be grown in rich soil, for the poorer the soil the richer is the tinting. All that is needed in this respect is just sufficient holding soil for the young plant to obtain a start. The evergreen V. Lowii is also beautiful just now, but the leaves are not so richly coloured as in V. inconstans. Amelanchier canadensis, which gives a wealth of white flowers in the spring, is now a gorgeous spectacle in shrubberies, the foliage having assumed rich shades of crimson and gold. Liquidambar styraciflua is another tree that gives beautiful autumn tints, but the colour is not so fine in young specimens as old ones. The Maidenhair Tree (Ginkgo biloba, syn. Salisburia adiantifolia) is giving a grand display of rich golden foliage. Amongst little-known shrubs, Aronia floribunda, allied to Crataegus, develops crimson foliage in autumn, and Stephanandra flexuosa has long sprays of small, slender, tinted growths, suitable for the decoration of dinner tables. Notes should be taken of any plant that develops specially pleasing autumn tints, for the planting season is directly before us.

Hibiscus.—Hibiscus syriacus is a charming shrub for autumn effect, and a few specimens should be grouped together in every garden. H. coelestis, H. palustris and monstrosus are each good garden plants, and all succeed in ordinary soil.

Housing Tender Plants.—Frost may occur at any time now without warning, therefore such plants as are required for another season should be housed forthwith. If the stock of Pelargoniums or similar plants is incomplete pot up some of the best of the old plants, and remember that a "store is no sore." Agaves, Cordylines, Fuchsias, Abutilons, Grevilleas, and others that have been used as dot or specimen plants should be taken indoors. Take up and dry gradually tuberous Begonias, Dahlias, Salvia patens and Lobelia cardinalis. Specimen plants growing in tubs, such as Hydrangea, Myrtle, Agapanthus and Plumbago, should be placed out of the range of severe frost. Keep the young stock of bedding plants as cool as is consistent with safety from damping off.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, OCTOBER 13—
B.G.A. Watford Branch Meet.

THURSDAY, OCTOBER 15—
Nat. Dahlia Society's Conference at Carr's Restaurant, Strand, 7 p.m.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 50.2°.

Actual Temperatures :—
London, *Wednesday*, October 7 (6 p.m.): 57°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, October 8 (10 a.m.): Bar. 29.9; Temp. 55°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11. Nursery Stock, at Coombe Wood Nursery, Kingston Hill, by order of Messrs. J. Veitch and Sons, Ltd., by Protheroe and Morris, at 12.

MONDAY AND WEDNESDAY—
Dutch Bulbs, Lilies, Palms, Azaleas, Rose Trees, etc., at Stevens's Rooms, King Street, Covent Garden, W.C.

WEDNESDAY—
Japanese Liliums, Bulbs and Palms, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 3.

Bastard Trenching.

The operation known as bastard trenching, the essential of which is the "breaking up of the bottom spit," has formed recently the subject of experiments by Messrs. Pickering and Russell. The land treated was of four distinct types—light sand, two rather heavy loams, and a strong clay, and many of the experiments extended over four seasons. The land after bastard trenching was planted with dwarf fruit trees, and the results of the operations were compared with those obtained with trees in similar but untrenched ground. The results showed a surprisingly small benefit accruing from the operation. It was found that the trees in the trenched ground showed at little if any advantage over those growing in the untreated plots; physico-chemical examination of the soil indicated also but small amelioration, either with respect to moisture or nitrate content, and the authors conclude that, except where the soil has a hard pan, bastard trenching—provided that no manure is incorporated with the bottom spit—is productive of little benefit to the growth of the trees.

It must be conceded that the results are surprising, for since the days of Jethro Tull we have been taught to attach great importance to the thorough working of the soil; at the same time we are inclined to think that if the experiment were repeated with quick-growing plants —vegetables or flowers—a more striking difference in favour of trenching would be observed. Although the experiments, as might be anticipated, were made and are described with care, we do not find mention of the extent to which the soil of the untrenched plots was disturbed during the planting of the trees. If the disturbance was considerable and affected more than the two top spits, the soil of the "untreated" plots was in fact and in some measure bastard trenched. In any case the moral to the gardener is apparent: supplement bastard trenching with the time-honoured practice of incorporating manure and other humus-yielding materials with the broken-up spit, and whenever possible add to the manure a little phosphatic artificial manure, such as basic slag.

A Blight and Frost Resisting Potato.

Attempts to discover a variety of Potato resistant to late blight (Phytophthora infestans) have been many, and some have come very near to success, but none has so far achieved it. To-day we hear that a new claim is made—this time from the Antipodes —and the claim appears to be well sustained. Nevertheless, we shall take leave to be benevolently sceptical until we are convinced of the validity of the resistance by actual tests in this country. As is so generally the case with important horticultural novelties, the exact origin of the latest candidate for the prize attaching to blight resistance is unknown. The variety, which bears the appropriate name of "New Era," was discovered six years ago by Mr. Harris, of Raetihi, who found it among an acre and a half of Eldorado and Northern Star. According to the statement made in the *New Zealand Farmer*, all the plants of this area were killed by blight—save one. The one resistant plant bore six rather ugly-shaped tubers, of which two only grew in the wet season. In the following year some 50 tubers of the new variety were planted alongside of an improved Up to Date. Blight came, destroyed the latter, but spared the new variety. The decisiveness of the result may be gauged from the facts that whereas the plants of Up to Date were so badly diseased as to be not worth digging, New Era yielded from 10 to 12 tons per acre. In the fourth year the blight-proof variety was planted with Northern Star. A severe frost just before the crops were ready for lifting demonstrated that New Era is not only resistant to blight but also to frost. Northern Star was cut down by the frost, but New Era resisted.

Further evidence of the resistance of the new variety was obtained by Mr. Harris in the two following seasons. The variety, which if it continues to behave in this exemplary manner is destined to bring fame to the raiser, is said to be a well-shaped Potato (although be it noted the first tubers are described as "rather ugly"), and to bear resemblance to Eldorado. It has a strong, thick stem, and "is not inclined to sprout very freely." It is said to have produced so much as 20 tons to the acre. We understand that the variety is being tested in this country, and we can only hope that the "New Era" will not belie its name.

Supplementary Illustration. — Begonia Altrincham Pink which is illustrated in the Coloured Supplement is a winter-flowering variety of the type obtained by crossing B. socotrana with a tuberous-rooted variety. It was raised by Messrs. Clibrans, Altrincham, and received an Award of Merit at the meeting of the Royal Horticultural Society on December 5, 1911.

R.H.S. Meetings.—At the request of the R.H.S. we announced in our last issue (p. 237) that, owing to the requirements of the military authorities, who were using the R.H.S. Hall for purposes of drilling and billeting troops, the fortnightly shows would have to be abandoned for the present. After we went to press, however, it was found possible to arrange for the show on Tuesday last, and now we have the following letter from the secretary, containing the satisfactory news that a more settled state of things may be expected:—

"I am pleased to be able to tell you that unless some exceptional crisis occurs, the shows of the society will from henceforth be continued uninterruptedly in the R.H.S. Hall, and the year's programme will be completed as appearing in the Book of Arrangements for 1914. To-day a representative from the Supply and Transport Office, Horse Guards (the authority concerned in the billeting of troops) called upon me and has undertaken that in future troops shall not be quartered on us if any other arrangement is possible; but that in the event of any grave crisis or emergency arising, such as to cause the calling up of many thousands of men in London, then all halls, etc., must be utilised, and ours, of course, amongst them. He seemed quite to think that we had been hardly dealt with in the past, and promised that it should not occur again, except in the case of absolutely unavoidable necessity.—Yours faithfully,
"W. Wilks (Secretary)."

The Prince of Wales's Fund.—On the 5th inst., when the sums subscribed to this Fund amounted to £3,000,000, the Prince of Wales issued the following letter:—

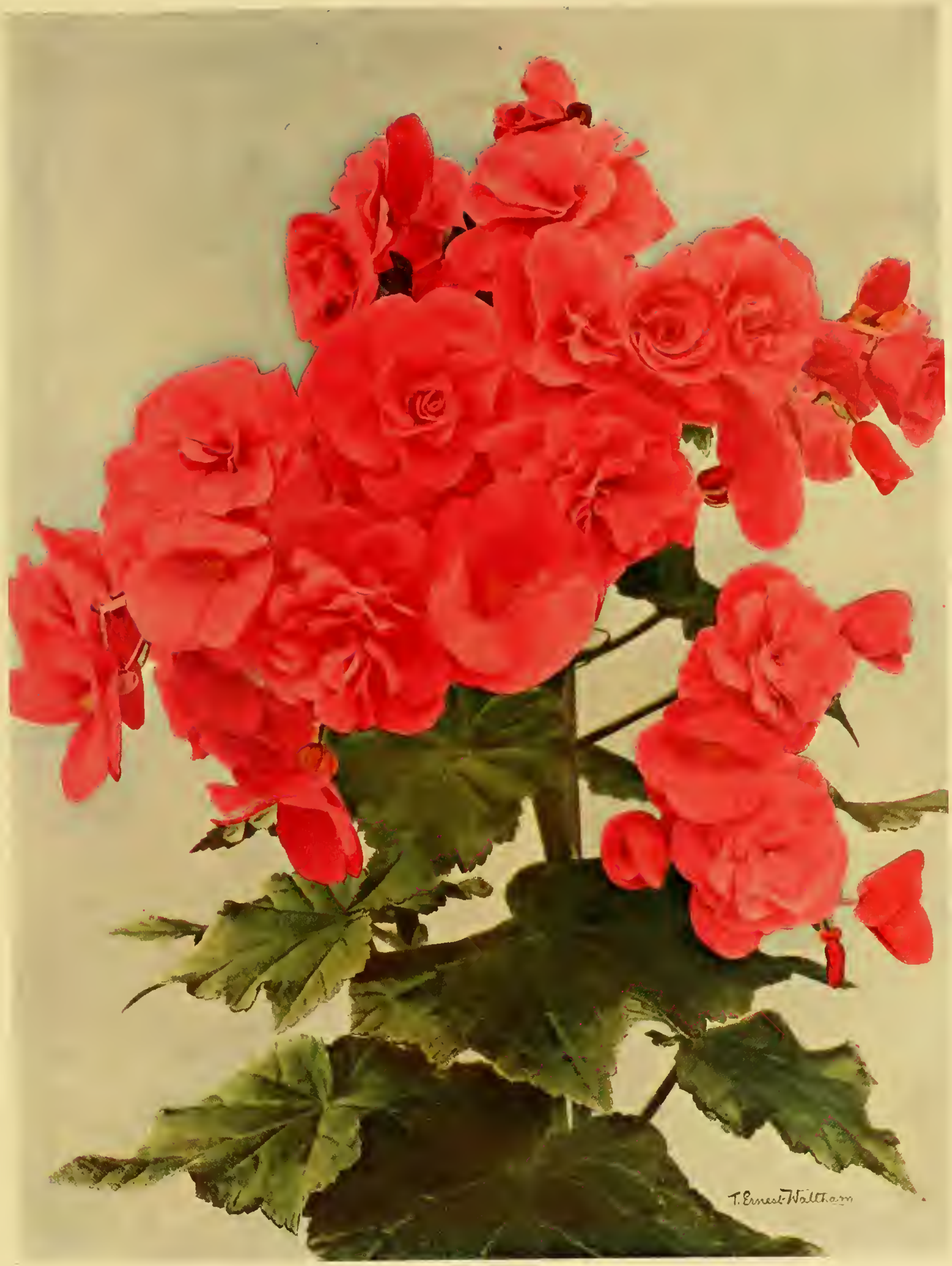
"Buckingham Palace.
"5th October, 1914.

"On the 6th August I appealed to the Nation to assist me in founding a National Fund to prevent and alleviate military and civil distress arising in consequence of the War. To-day, after the lapse of exactly two months, I am happy to say that the Fund has reached the splendid total of three million pounds. I wish to take this opportunity of thanking once more the many thousands of generous subscribers who have helped me to achieve this grand result.

"I have delegated the responsibility of administering the Fund to the Executive Committee which I have appointed, on the advice of the Prime Minister, and I count upon the Committee to see that assistance in emergency cases is adequate, and given with as little delay as circumstances permit. I trust that the portion of the Fund which is to be applied in relief of civil distress may, as far as possible, flow into productive channels, such as assisting schemes for male and female employment, and perhaps industrial training; for it is as repugnant to me, as it must be to the recipients, that assistance should be distributed only in the form of doles. What men most want is work, and what the young people need is training. The sum which has already been raised is magnificent, and I am confident that the generous British public will continue to do their utmost to alleviate the distress which War inevitably brings in its train. "Edward."

Monsieur Henri Graire.—The note received last week from Monsieur Henri Graire was inserted under a headline which conveyed the impression that this much-respected French

Supplement to the "Gardeners' Chronicle."



WINTER-FLOWERING BEGONIA "ALTRINCHAM PINK."

Orchid-grower was engaged in the horticultural trade. This is not the case. M. Graire may dispose of superfluous stock from time to time, but nevertheless he is to be counted amongst the few French amateurs, and we desire to correct the impression our note may have caused.

Dahlia Conference.—The National Dahlia Society will hold a conference on Dahlias at Carr's Restaurant, Strand, London, on the 15th inst., at 7 p.m. The president, Mr. Reginald Cory, will preside. The following papers will be read :—"Dahlias for Parks and Gardens," by Mr. Jos. Cheal; "The History and Development of the Dahlia," by Mr. Jas. Stredwick; and "The Dahlia in America," by Mr. J. Harrison Dick.

Awards at the White City.—Messrs. Kelway and Son inform us that the following Awards have been made to their firm for exhibits during the past season at the Anglo-American Exposition, Shepherd's Bush :—Gold Medal for hardy border plants and Gladioli in the grounds; Silver-gilt Medal for cut flowers of Paeonies and other border plants; two Silver-gilt Medals for spikes of Gladioli; and the Grand Prize for the highest aggregate marks gained for these three exhibits.

A Potato Competition.—No fewer than 671 growers entered in a recent competition at Edinburgh for prizes offered by Messrs. Dobbie and Co. for six tubers of Potato Burnhouse Beauty. In view of the large number of entries the prizes were increased to 67, equal to one prize for every ten dishes. The 1st prize was won by Mr. W. F. Cowe, Kelso; the 2nd by Mr. R. Scott, Jedburgh; and the 3rd by Mr. Wm. Scott, Gordon. The illustration in fig. 99 shows a general view of the exhibition.

Edinburgh Chrysanthemum Show.—The Council of the Scottish Horticultural Association has decided to hold the annual Chrysanthemum Show, as arranged, in the Waverley Market, Edinburgh, on November 12, 13 and 14. The profit on the show will be given to the Belgian Relief and British Red Cross Funds.

Chrysanthemums in the L.C.C. Parks.—We are informed that Chrysanthemum exhibitions will be opened to the public at the undermentioned London parks on the dates named :—Brockwell Park, 15th inst.; Finsbury Park, 16th inst.; Southwark Park, 11th inst.; Victoria Park, 10th inst.; Waterlow Park, 15th inst. The exhibition at Battersea Park opened on the 7th inst.

Coombe Wood Nursery.—The sale of the final portion of the stock at Messrs. James Veitch and Sons' nursery at Kingston Hill has been taking place this week, and will continue each day until Saturday in next week, October 17. The catalogue embraces 190 pages, comprising just over 7,200 lots, and includes the whole of the stock at the nursery. Amongst the many items are collections of Chinese plants, choice Conifers, Roses, climbing plants, upwards of 9,000 named Rhododendrons, including about 400 plants of Pink Pearl, and standard flowering trees.

Farm Produce for His Majesty's Forces.—Complaints having reached the Board of Agriculture and Fisheries that the arrangement under which notices were circulated throughout England and Wales, inviting farmers to make returns of the quantity of produce they have to sell at fair market price for the use of His Majesty's forces, is not working quite satisfactorily, the Board is taking steps, in consultation with the War Office, to constitute in each county or group of counties a Farm Produce County Committee. The committees will consist of leading farmers nominated by the presidents of the Royal Agricultural Society of England, the Central and Associated Chambers of Agriculture, the Farmers' Club and the National Farmers' Union. These committees will invite farmers to submit samples and to quote prices for the various classes of farm produce which they wish to sell for the use of His Majesty's forces, and it is hoped that they will be in a position to take up their duties in some districts in about ten days' time.

War Items.—The following exhibitions have been abandoned :—Devon and Exeter Horticultural Society's autumn exhibition, fixed for October 29 and 30; the West of England Chrysanthemum Society's annual show; and the autumn show of the Southampton Royal Horticultural Society, fixed for November 3 and 4.

—— A considerable number (about seventy in all) of the employees of Messrs. Sutton and Sons, Reading, have joined the colours and are now preparing for active service. The two sons of Mr. Leonard Sutton (Messrs. Noel and Eric Sutton) are both second lieutenants, the one in the Berks Yeomanry, the other in the Royal Sussex Regiment of the new Army. Among the employees who have joined (some of whom were previously in Territorial regiments) every department of the business is represented—the show department, ledger office, flower seed department, packing floor, nursery and farm, foreign office, and many others.

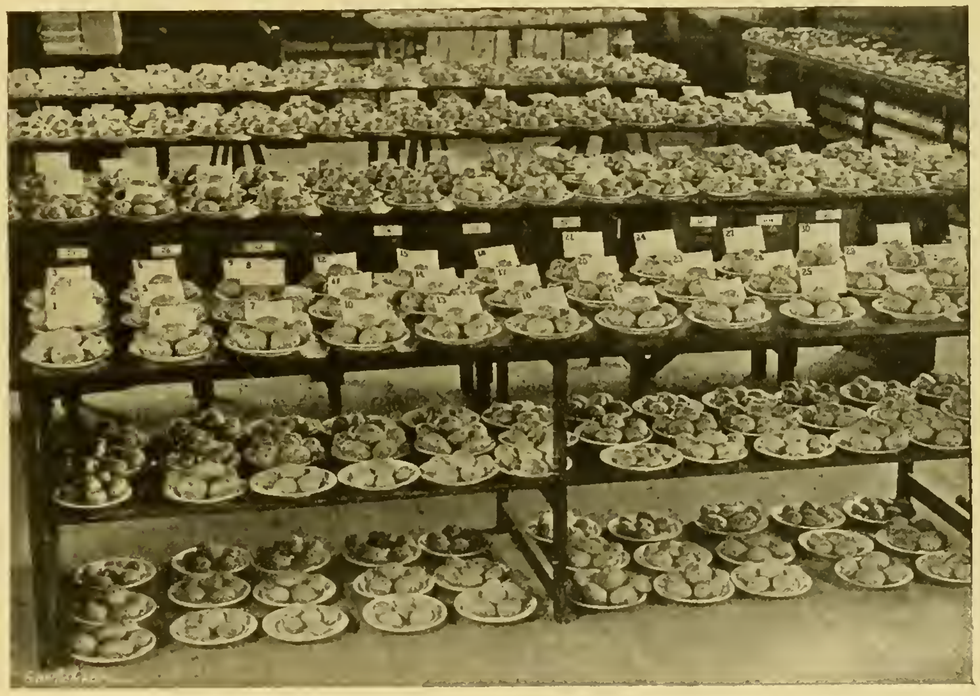


Fig. 99.—Potato "Burnhouse Beauty," exhibited in competition at Edinburgh.

—— A letter sent to us for publication by one of the leading English seed houses indicates to those acquainted with the seed trade that attempts are being made to secure sales in this country for German goods. In view of this attempt it must not be overlooked that despite any inconvenience caused by the failure of normal sources of supply, any attempt to trade with the "King's enemies," albeit indirectly, is to be deprecated. The letter was received as recently as September 30, from a firm which has probably no connection with the Dutch bulb or seed trades. It is as follows :—

"Rotterdam.

"Presuming that in consequence of the wars, the end of which seems still to be a long way off, all connection with your former suppliers of Natural Grass Seeds has been cut off, we beg to recommend you our firm for the supply of such seeds. Having been fortunate enough in securing the services of a man well acquainted with the seed trade, we are in a position to meet all your requirements.

"On the back hereof we give you our price list, and beg to point out that we guarantee the purity and growth of our seeds, as stated in the list, according to Zurich norms and conditions. Should the purity and growth of our seeds not come up to the percentage stated, granting a latitude of 5 per cent., we shall cover you for the difference in value, but you may rest assured that our seeds will always be strictly in accordance with the guarantee. As to other kinds of Natural Grass Seeds, all crops being in arrears this year, we shall not be able until later to submit you offers for same. In view of the wars and the difficulties arisen therefrom, we are, however, obliged to request that together with your order you place its amount with our bankers, 'Rotterdamsche Bankvereeniging—Rotterdam,' to be handed over to us against delivery of B/L.

"Hoping that our quotations may induce you to favour us with your commands, which will be carefully attended to, we remain, yours faithfully,

"———."

The letter certainly covers an attempt to open up dealings between gardeners of this country and the King's enemies, for if the seeds advertised were grown in Holland the writer of the letter would have taken good care to proclaim the fact. We do not draw attention to this attempt in order to warn seedsmen in this country. They are already aware of the attempts which are being made to run the silent blockade by devious routes. Nor do we give publicity to the letter in order to teach the seed trade their duty. We have good reason to know that the trades will have nothing to do with such dealings. Our purpose rather is to show the public that it must be prepared to support the seedsmen in their patriotic determination to have nothing to do during the war with the enemies' goods. That support must take the form of paying, if need be, a somewhat higher price for seeds during the coming year. For it is certain that good seed grown in our own or friendly or neutral territories is bound to cost more than in normal times. It may be added that, although inconvenience and loss of profit must be borne by the seedsman—for the higher prices are likely to be accompanied by lower profits—it is practically certain that all the seeds required for our gardens are to be obtained from other than German sources. There is, therefore, no excuse whatever for anyone seeking to avail himself of the offer contained in the Rotterdam letter.

—— Those engaged in the horticultural trades in and about Covent Garden are making a praiseworthy and very successful effort to raise a special fund of their own towards the relief of the chief sufferers in the war, both English and Belgian. The movement is under the guidance of Mr. Geo. Monro, senior, who presided at a meeting held at the Tavistock Hotel on the 25th ult. A large number of salesmen and others attended the meeting, and the sum of nearly £500 was collected. The vice-president is Mr. M. J. Garcia and the hon. treasurer Mr. F. R. Ridley. Donations which have been subsequently received make the total amount so far subscribed up to £600—a very gratifying result. The list is to remain open a short time longer. It is to be divided (according to the wishes of the donors, who are asked to state to which fund they wish their subscription placed) between the Prince of Wales's Fund and the Belgian Relief Fund. The first list now to hand includes the following donations:—Geo. Monro, £50; W. T. Jay, £50; T. J. Poupart, £26 5s.; W. Dennis and Son, Ltd., £25; T. Rochford and Sons, Ltd., £25; Parsons and Co., £21; Ridley, Houlding and Co., £21; Margetson and Co., Ltd., £15; Jas. Bradnum, £10 10s.; Jimmy Rogers, £10 10s.; Isaacs Bros., Ltd., £10 10s.; E. H. Lewis and Son, Ltd., £10 10s.; Mrs. Rouse, £10 10s.; B. Read, Ltd., £10 10s.; Major and Carr, £10; Jesse Smith, £10; Geo. Monro, Ltd. (staff—1st instalment), £10; Philip Ladds, £7 7s. The following donors each gave five guineas:—G. Monro, jun., Mrs. Monro, Garcia, Jacobs and Co., D. Ingamells, A. Baker, Coupe and Son, Wheeler and Monro, Geo. Coleman, Barnett Emanuel, R. Miller, Henry and Co., John Sullivan, J. Alexander, T. Walton, O. Hiehle, Horticultural Travelling Structures, Ltd., W. Duncan Tucker and Co., R. A. Jones, Mrs. E. S. Jay, J. and E. Page, R. Hemming, G. Adams and Co., Samuel Hewitt, Ltd., James Sweet, Perkins and Adamson. The following each gave five pounds:—D. D. Pankhurst, W. Wallace, E. Rochford, Lowe and Shawyer, Ltd., M. Hutchings, H. J. Gay, Henry Jones, Forster and Robins, H. W. Heath, and a number of smaller sums make up the present total to £619 2s. 4d. We learn that collecting boxes are to be distributed throughout the market, and it is hoped that a substantial addition to the fund will be procured from this source. These boxes, and any information with reference to the fund, can be obtained from the hon. secretary, Mr. H. J. Gay, 21, Catherine Street, Strand, W.C.

—— Madame Madeleine Lemaire, who is a well-known French flower-artist, has been able, by showing courage and firmness in the face of danger, to save her beautiful château from demolition by the Germans. When the invading army passed through the town in which she lives she was alone with her young daughter and one maid. On the eve of the battle of the Marne, a group of officers alighted at her door, Madame Lemaire met them herself, and disarmed them by her courtesy and dignity. Although much damage was done to the other houses in the same place, her own was untouched, and the officers, before leaving, apologised for the necessity which impelled their intrusion.

—— The Admiralty and War Office have given their consent to a scheme which is being promoted by the Vegetable Products Committee, to collect and deliver fresh fruit and vegetables, jams, and preserves, supplied free of cost, to warships in accessible stations, Army camps and depots, and hospitals, and to assist in the organisation and development of fruit and vegetable industries. The Vegetable Products Committee will be glad to receive subscriptions towards the necessary expenses of the scheme. Cheques should be made payable to Messrs. Jackson, Pixley and Co., chartered accountants, 58, Coleman Street, E.C., and crossed "A/c Vegetable Products Committee." Admiral Jellicoe, in writing to a member of the Committee, states that fruit would be greatly appreciated by the men. Gifts of fruit and vegetables, especially Apples, Pears, Damsons, Quinces, Potatos, Onions, Carrots, Beets, Turnips, and Parsnips, all in first-class condition, will be keenly appreciated, and should be carefully packed in crates or boxes, and addressed to Vegetable Products Committee, Salvage Warehouse, Paddington Goods Station, London, W. The name and address of the sender should be on the outside of the package, or on a tie-on label, and the nature of the contents should also be stated in a conspicuous position.

Potato Seed for Belgium.—On the occasion of the annual visit of inspection by farmers and growers of the Potato grounds of Mr. T. A. Scarlett, of Edinburgh, it was suggested by Mr. Scarlett that a donation of a thousand tons of seed Potatos be sent to Belgium in time for the spring sowing. He stated that the seed should be of the best grown in this country, and that if a thousand tons were not sufficient another thousand should be forthcoming. He hoped that farmers would deal with the question, when the time came to consider it, in a generous spirit, and with high appreciation of the bravery and self-sacrifice of this gallant little nation, which in the first days of the war had borne the brunt of the battle.

Barbados Fruit Crops in Relation to the War.—As an illustration of the way in which the war is affecting parts of the world other than Europe, we may quote the following paragraph from *The Agricultural News*, Barbados. Under the head of "The War and Locally-grown Food-stuffs" it says:—"In view of the disturbed nature of existing circumstances, it may be prudent to urge planters and others to consider the advisability of planting as much available land as possible with quick-growing food crops. Apart from any immediate shortage of food supply that may occur, it would seem only good business policy to endeavour to profit by the higher prices that must eventually arise as a natural result of the disturbed conditions resulting from the war in Europe. From the peasant's point of view the adoption of the policy is essential in order that he may find himself as little dependent as possible upon imported food supplies, the prices of which will no doubt continue to range high so long as the consumers' demand remains urgent. It is fortunate that the Corn crop is now soon to be reaped, but fresh seed should be sown as soon as possible, so as to have another supply in three months' time. Bonavis Beans, which ripen in six weeks, are likely to constitute a useful crop at the present time, and, indeed, most of the Beans and Peas, as well as Sweet Potatos and Guinea Corn, may with advantage be planted, even though they may reduce the area under Cotton and similar crops grown for export purposes."

Mr. W. H. White.—After upwards of 25 years' service as Orchid-grower to the late Sir Trevor Lawrence, and since to Elizabeth Lady Lawrence, Mr. W. H. White is seeking a new appointment. The high state of perfection which he has always maintained in the famous Burford collection of Orchids is well known, and it testifies to the great skill and care expended upon it. We trust that Mr. White will soon find a new field for the exercise of his undoubted talents.

A New Park for Liverpool.—The Parks and Gardens Committee of the Liverpool Corporation is on the point of developing one of its recent purchases, the Walton Hall Estate. This extensive piece of land abuts on Queen's Drive and Walton Hall Avenue. The committee offered three premiums of 100 guineas, 50 guineas and 25 guineas respectively for the best sets of plans for development. Twenty-two sets of plans were sent in. The first premium has been awarded to two Liverpool architects, Messrs. H. Charlton Bradshaw and Mr. George B. Rowlands. Mr. Rowlands is a member of the firm of Wm. Rowlands and Co., Childwall Nurseries, Liverpool. The second premium was awarded to Messrs. Harry Pierce, James B. Walker and W. L. Dolman, of Windermere; and the third to Messrs. E. Prentice Mawson and J. Radcliffe Mawson, of Lancaster. It may be mentioned that Mr. Pierce was a former student of Mr. J. H. Mawson, of Lancaster, and Mr. Walker was for eight years the manager of the London branch of Mr. Mawson's business. The first premium plans (which have been adopted subject to approval by the City Council) provide space for all kinds of outdoor recreation, also Rose gardens, children's gymnasia, and wild-flower gardens, the whole scheme involving an expenditure of about £40,000.

"Botanical Magazine."—The *Botanical Magazine* for the month of October contains descriptions and illustrations of the following plants:—

Ixora umbellata, tab. 8,577.—The Ixora here named is a native of Java, from whence it was imported in 1889. It forms a branching shrub, with elliptic leaves 6 to 10 inches long. The flowers are white, arranged in corymbs about 6 inches across, and are borne in abundance. The plant flourishes in a tropical house; it has been cultivated in this way at Kew since 1889, and flowers freely in early summer.

Cytisus pallidus, tab. 8,578.—This beautiful Genista, as it was formerly called, is indigenous to the Canary Islands; the specimen figured in the *Botanical Magazine* was grown at Kew from seed presented by Dr. Perez, of Teneriffe. The leaflets are long and narrow, the under surface green and silky, the upper surface slightly hairy. The flowers, of a brilliant golden colour, are produced in abundant racemes. In favourable conditions the plant forms a branching shrub about 8 to 10 feet high; it is extremely ornamental, but should only be grown in a large greenhouse if it is intended to attain its full height.

Trichocaulon pictum, tab. 8,579.—This succulent herb is grown in the tropical house at Kew, and flowered there for the first time in June, 1912. It was originally discovered in Little Namaqualand by Dr. Marloth, but the present specimen was sent to Kew by Professor H. H. W. Pearson from the same country. The flowers are fascicled, each fascicle being two to four flowered. The corolla measures a third of an inch across, the ground colour is whitish, spotted and streaked with purple. The outer corona, which is five-lobed, is pale-yellowish, blotched with purple; the inner corona is yellowish with purple margins to the lobes.

Indigofera Kirilowii, tab. 8,580.—This attractive shrub is a native of North China and Korea. The bright green leaves are divided into seven to nine leaflets, about 1¼ inch long; the flowers are a delicate pink, with crimson markings at the base. The shoots usually die back during the winter, therefore it is desirable to take cuttings in late summer for propagating purposes. The plant usually flowers from June to July; it does well in a sunny position in warm, loamy soil.

Agave bracteosa, tab. 8,581.—This Mexican Agave is a distinct species, belonging to the section Littaea. It is somewhat similar in appearance to A. yuccaefolia, but has a longer stem, and the filaments are longer in proportion to the size of the perianth. The plant forms a short shrub, with about fifty leaves in a rosette round the base of the stem. The leaves are long and tapering, about 2½ inches wide at the base. The flower perianth is green, with protruding white filaments about 2¼ inches long and bright-yellow anthers. The species flowered at Kew, in the succulent house, for the first time in 1910. It ripened seeds, and seedlings have been raised. The original plant has since died.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Reversion in Euphorbia (see p. 230).—Mr. Brown's interesting account of the reversion of a species of Euphorbia is a valuable contribution to the vast accumulation of proofs of the truth of Darwin's explanation of the primary cause of evolution—namely, by the plant responding to the "direct action of changed conditions of life," so that a new variety, and therefore also species, arises "without the aid of natural selection" (*Variation*, Vol. II., pp. 271-2). The "reversion" of the Euphorbia of course implies a previous acquisition of the hereditary characters of a massive water-storing stem in desert plants. Such we now know is the result of drought; hence has arisen a xerophytic "mimicry," for it resembles the same characters in the Cacteae of Mexico growing under similar conditions. Similarly there is a mimicry in water plants, since many species of widely different families assume the same acquired character of a dissected foliage. As to the Cacteae, there is one tribe containing three genera, which grow in tropical America and islands, which have, more or less, reverted in a similar way to the above Euphorbia, for Pereskia has a woody stem and ordinary-sized leaves, but the latter are somewhat fleshy with a spiny pulvinus, indicating the retention of ancestral features. Opuntia has leaves in the young state, just as our own Furze has, while in Rhipsalis they are scale-like. Professor Bateson tells us that he has "come to the conviction that the principle of natural selection cannot have been the chief factor in determining the species of animals and plants"; but he adds: "We are even more sceptical as to the validity of that appeal to changes in the conditions of life as direct causes of modification, upon which—latterly, at all events—Darwin laid much emphasis" (*Nature*, August 20, 1914, p. 635). It may be added that while Darwin gave us two collections of examples of the result of changes by adaptation, he offered *none* in illustration of natural selection, but only a "theory," as he called it. On the other hand, there is an abundance of both *inductive evidence* as well as *experimental verification* of the *fact* (not theory) that self-adaptation is the true origin of evolution. *George Henslow.*

Naming Apples.—The varieties of Apples which are or have been in general cultivation are so numerous that it is at times a difficult matter to keep in touch with them. Seedlings are constantly being raised, therefore there is no necessity for sending out old varieties under new names, and yet I find this is being done. Some years ago our firm received an Apple under the name "Improved Cox's Orange Pippin," which I remarked should be of great excellence to be worthy of its name. The tree has been a long time in fruiting, but this year has a full crop and turns out to be Brownlees's Russet. Another Apple, sent by a friend in the North, was called Rev. J. B. Hall, yet this proves to be Annie Elizabeth. I do not suggest that this has been done intentionally, but the grower, not being familiar with the variety, has renamed it, thinking that it was new, whereas had it been submitted to an expert or sent to the Fruit Committee of the R.H.S. this trouble would have been averted and growers might have been spared the expense of propagating stock which they did not require. I am writing this note in order that these new names may not be kept up, for we all remember how long it took to convince some people that Backhouse's Beurré was the same Pear as the old Beurré d'Amanlis, although others discovered the fact at first sight. *A. H. Pearson, Lowdham.*

Curious Behaviour of a Grafted Apple—Some four or five years ago I grafted a tree of Ecklinville Seedling Apple with three scions of James Grieve. The scions were inserted between the wood and the bark of the stock—a method I employ when regrafting old or established trees. A shoot arising 1¾ inch above the base of one of the grafts (see fig. 100) is this year bearing fruits of Ecklinville Seedling, the shoots and leaves being of that variety also. In all probability a latent bud from the stock pushed through the bark of the scion in the year of grafting. This shoot is less strong than those of James Grieve on the same tree. It is very noticeable that regrafted trees—that is, those double-grafted—produce fruit of superior quality to those grafted or budded direct on the stock. This is well known to be the case with Pears, but I do not know of its having been remarked also with Apples. I was interested to note that Mr. Beckett's experience of Apple trees planted in grass coincides with mine. We have an enormous crop of Apples this year, and the largest and best coloured fruits are again produced on trees in grass. Nor can I see that the growth is affected at all injuriously. On the whole I should be inclined to say, tree for tree, those on grass are the more robust. *R. P. Brotherston, Tyninghame Gardens, East Lothian.*

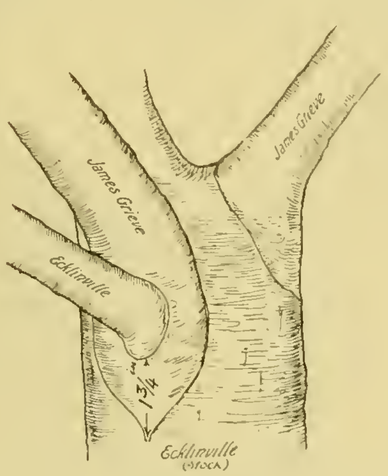


Fig. 100.—curious behaviour of a grafted apple stock.

Flowers in Season.—I am sending a few flowers of plants which help to make the garden attractive on sunny days in autumn. All are from the open except Oxalis Bowiei, which is luxuriating in company with Galanthus of many different species and Cyclamen macrophyllum in a bed at the north end of an unheated vinery. Oxalis lobata, from Chili, is a gem for any sunny nook in a rockery, and if the drainage is good and the soil not too heavy, seems to be proof against any frost that we get here. Oxalis hirta and O. hirtilla seem to differ only in the colour of their flowers, and as Nicholson's *Dictionary of Gardening* states that the flowers of O. hirta vary from pale violet to deep red, I am wondering whether these flowers represent two species or only one. Both are similar in growth, which is almost twiggy, and there seems no difference in the foliage, which is smooth above and hairy beneath. Convolvulus cantabricus is no prettier than our common field weed, but is not, I fancy, common. I enclose also a couple of flowers of a form of Campanula longestyla, which strikes me as being of an exceptionally rich colour. Dianthus fruticosus, of which the seed came from the Botanical Garden at Athens, does not deserve the praises lavished on the plant in Sibthorp's *Flora graeca*, and except as a late flowerer seems a poor thing if this is the true plant. I should be glad if you could name for me the other Dianthus, I suppose a form of D. laciniatus, which flowers for months and is very fragrant. Tricuspidaria lanceolata, owing to the prolonged heat, cannot keep its buds back, and is now in full flower, seven months before its time. *A. C. Bartholomew, Park House, Reading.* [The species of Dianthus is D. gallicus.—Eds.]

Fruiting of Double-flowered Peach.—The 80 fruits mentioned on p. 193 are now ripening, and they compare not unfavourably with foreign Peaches brought to London, though less well coloured. It is surprising that Peaches on an exposed north-east slope should ripen at all upon a standard. *J. Edmund Clark.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 6.—The fortnightly meeting and exhibition, fixed for Tuesday last, was held as arranged, the military authorities having agreed, almost at the last moment and after the official notice of the abandonment of the show was published, to place the hall again in the possession of the Council. It was only to be expected that, in consequence of the shortness of the notice given to exhibitors, the show would be much smaller than usual, and such was the case. The chief subjects before the Floral Committee were border Asters, Dahlias, Codiaeums, Roses, and Carnations. This body granted four Awards to novelties, including two Asters, a crimson Carnation, and the Collerette Dahlia illustrated in fig. 101.

The Fruit and Vegetable Committee made no Award to a novelty, but Medals were awarded to four good groups.

The Orchid Committee recommended three First-class Certificates and two Awards of Merit.

At the 3 o'clock meeting in the lecture room, Mr. James Hudson delivered an address on "The Art of Informal Gardening."

Floral Committee.

Present: H. B. May, Esq. (in the chair), Messrs. G. Reuthe, W. J. Bean, John Green, C. R. Fielder, J. W. Moorman, John Dickson, H. J. Jones, Arthur Turner, Chas. E. Pearson, W. P. Thomson, E. H. Jenkins, F. W. Harvey, R. C. Notcutt, E. H. Bowles, R. Hooper Pearson, Jas. Hudson, and W. H. Barr.

AWARDS OF MERIT.

Dahlia Canopus (see fig. 101).—A Collerette variety of pale lemon-yellow colour, perfect in form, and 5 inches across. The plant is said to be free in blooming, carrying its flowers on long, wiry stalks. Shown by Messrs. J. Stredwick and Son.

Aster Purple Prince.—This mauve-purplish variety belongs to the Novae-Angliae section, and is a seedling from the variety W. Bowman. The flowers are large for its section, and a good colour. Shown by Hon. Vicary Gibbs (gr. Mr. Edwin Beckett).

Aster Cloudy Blue.—A pale lavender-blue variety of the Novi-Belgii section, having double flowers, resembling a pale blue Achillea. It is the best double Aster of recent years, and the growths are rigid and wonderfully free blooming. Shown by Mr. Ernest Ballard.

Carnation Princess Dagmar.—A deep crimson flower of large size and sweet perfume, borne on tall, stiff stems. The calyx, as shown, does not burst, so that the bloom retains its best form. Shown by Messrs. Allwood Bros. and Messrs. Stuart Low and Co.

GENERAL EXHIBITS.

Mr. L. R. Russell, Richmond, Surrey, exhibited an attractive group of shrubby plants on the floor. Clematis in bloom brightened the back, the varieties Lady Northcliffe, lavender, Jackmanii superba, purple, and Mme. Grange, claret, being all finely in flower. A group of Crataegus Pyracantha Lalandi and another of Aucuba vera, both bearing a profusion of scarlet berries, gave further touches of colour amongst such attractive foliage plants as Eurya latifolia variegata, Japanese Maples, Ivies of sorts, and graceful Bamboos. (Silver Banksian Medal.)

Messrs. H. B. May and Sons, Edmonton, showed Codiaeums (Crotons), Ferns, Bouvardias, and Begonias. The Codiaeums were arranged with the Ferns, and the staging of them was done with great skill. The plants were all finely grown, and the Codiaeums splendidly coloured, notable varieties being Prince of Wales, Thomsonii, Golden Chain, Disraeli, edmontoniense, and Warrenii. (Silver Flora Medal.)

Mr. Geo. Prince, Oxford, exhibited Roses in variety. In the centre of the group was the new pink variety, Josephine Nicholson, evidently a fine late autumn Rose. (Silver Banksian Medal.)

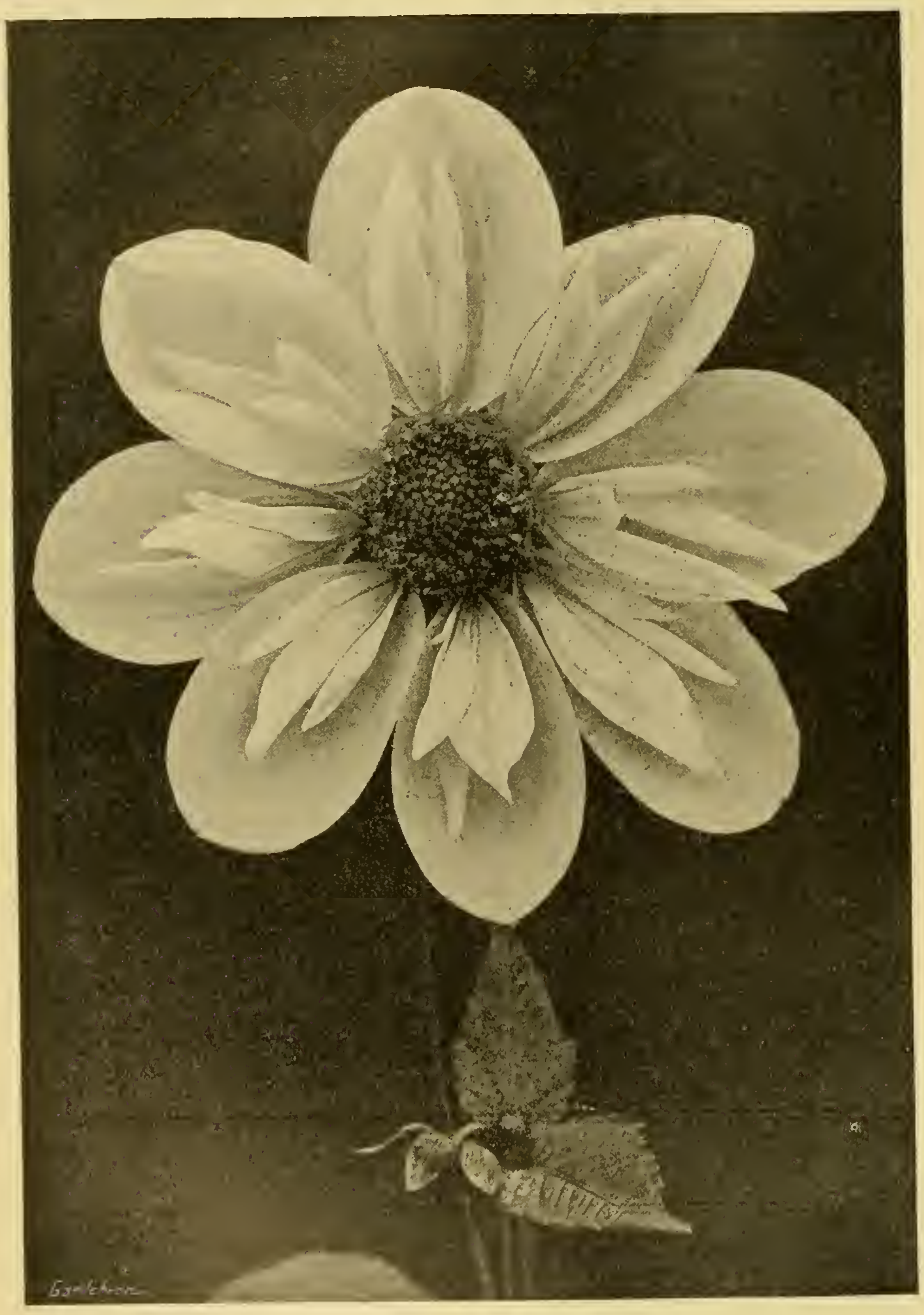


Fig. 101.—COLLERETTE DAHLIA CANOPUS; COLOUR PALE LEMON-YELLOW.

(See Awards by the Floral Committee.)

Messrs. Allwood Bros., Wivelsfield, had a small but choice exhibit of Perpetual-flowering Carnations, for which a Bronze Flora Medal was awarded. Wivelsfield White (scented), Salmon Enchantress, and the new Philadelphia, clear pink, were the best varieties.

Carnations were also exhibited by Messrs. Stuart Low and Co., Enfield (Bronze Flora Medal); and Mr. C. Engelmann, Saffron Walden. (Bronze Flora Medal.)

Messrs. J. Cheal and Sons, Crawley, had one of the most attractive exhibits in a collection of autumn tinted foliage; Rhus typhina, Berberis Thunbergii, Koelreuteria paniculata, Euonymus europaeus, Quercus palustris, Pyrus (Amelanchier) arbutifolia, A. canadensis, Acer japonicum laciniatum, and Liquidambar styraciflua were all strikingly beautiful. This firm also showed Dahlias, Asters, and Roses. (Silver Flora Medal.)

Mr. Amos Perry, Enfield, staged a floor group composed of hardy flowers daintily arranged. Michaelmas Daisies were chiefly employed, but interspersed with these were Liatris pycnostachys, Kniphofias, including K Macowanii, a small, orange-scarlet flowered species; Helianthus sparsifolius, and two fine Erigerons, E. speciosus roseus, and E. hybridus Amos Perry, with big, lavender-coloured flowers. (Silver Banksian Medal.)

Mr. Ernest Ballard, Colwall, near Malvern, exhibited his novelties in border Asters, for which a Silver Banksian Medal was awarded. There were large sheaves of Peggy Ballard, lavender, shaded with purple; Glory of Colwall, pale lavender; Nancy Ballard, purplish mauve, and Cloudy Blue, the best double variety. (Silver Banksian Medal.)

Messrs. H. J. Jones, Ltd., Hither Green, Lewisham, contributed a very pretty exhibit of border Asters, as at the last meeting. Two vases of his fine early Japanese Chrysanthemum Bob Pulling were included in the display, the rich golden colour standing out conspicuously amongst the softer tones of the Michaelmas Daisies. (Silver Flora Medal.)

Messrs. G. and A. Clark, Ltd., Dover, showed hardy flowers, including many sorts of Asters, Verbena venosa, Cimicifuga simplex, and Zauschneria californica. (Bronze Banksian Medal.)

Messrs. Barr and Sons, King Street, Covent Garden, showed Chrysanthemums, Gladioli, Asters, Kniphofias, and hybrid Nerines.

Mr. G. Reuthe, Keston, Kent, showed Alpines in pots, border Asters, and sprays of Desfontainia spinosa in bloom.

Mr. W. Wells, Junr., Merstham, Surrey, exhibited border Asters and Phloxes. (Silver Banksian Medal.)

Messrs. K. and E. Hopkins, Shepperton-on-Thames, had a small exhibit of Alpines.

Messrs. J. Stredwick and Son, St. Leonards, showed new Dahlias, principally Collerette varieties. A beautiful white variety was named Swallow, and there were other fine blooms marked with Petunia colour, gold, and orange, and pink and gold respectively.

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, T. Armstrong, F. Sander, S. W. Flory, E. H. Davidson, A. Dye, W. H. White, R. Brooman White, C. H. Curtis, F. M. Ogilvie, F. J. Hanbury, R. G. Thwaites, J. Wilson Potter, R. A. Rolfe, Stuart Low and Sir Harry J. Veitch.

AWARDS.

First-class Certificates.

Laelio-Cattleya Mrs. Evelyn Norrie, from J Gurney Fowler, Esq., Brackenhurst, Pembury, Tunbridge Wells (gr. Mr. J. Davis). A superb Laelio-Cattleya, and one of the largest and best yellow-petalled hybrids. The parentage is unrecorded, but the suggestion that L.-C. luminosa with L. tenebrosa Walton Grange was one of its parents is probable. The plant bore a spike of three flowers, broad in all their parts, the sepals and petals clear canary-yellow, the fine lip dark violet with a rose shade, having white lines from the base, which is tinged with yellow towards the front.

Cattleya Princess Royal (*Fabia* × *Hardyana*), from J. Gurney Fowler, Esq. A gorgeous Cattleya, taking most after the richly coloured C. Fabia gigantea of Sir Geo. Holford. The three-flowered inflorescence bore broad-petalled flowers of a bright, rosy-mauve colour, the openly expanded lip being ruby-crimson with a closely arranged ray of golden-yellow lines from the base. Compared with any of the known species of Cattleya it shows the fine improvement made by the hybridist.

Cattleya Rhoda Fowler's variety (*Iris* × *Hardyana*), from J. Gurney Fowler, Esq. In the forms of C. Rhoda previously shown the structurally diverse parents of C. Iris (bicolor × aurea) has manifested itself in the different forms of the progeny, some having the elongated labellum of C. Iris, and others the more ample lip shaped as in C. aurea. In the present form a quite intermediate shape, with the firm texture of C. Iris, and a broadly ovate crimped-edged lip, is a new departure. The sepals and petals are Indian red with a gold shade, the lip ruby-red with a violet tint, deep yellow lines running from the base.

Awards of Merit.

Cattleya Antiope (*Chamberlainiana* × *Dowiana aurea*), from J. Gurney Fowler, Esq. C. Chamberlainiana (Leopoldii × Dowiana aurea) is one of the earliest Veitchian hybrids. As a parent it gives varied results. The present fine form is of C. aurea shape, the sepals and petals Cowslip-yellow; the lip, which has a velvety surface, purplish-red with the yellow lines from the base usually seen in C. Dowiana crosses.

Laelio-Cattleya Britannia Mélanie (*L.-C. Canhamiana alba* × *C. Warscewiczii Frau Mèlanie Beyrodt*), from Messrs. Charlesworth and Co., Haywards Heath. A pretty Laelio-Cattleya, with exactly the same colouring as the Cattleya parent. Sepals and petals white, the front of the lip violet-purple with a slight white margin.

GENERAL EXHIBITS.

T. J. Finnie, Esq., Claygate Lodge, Claygate, showed a selection of excellent forms of Cattleya labiata, which he brought from Brazil, and has successfully cultivated for the past three years. The plants bore several spikes, with in some cases three or four flowers on a spike. (Bronze Banksian Medal.)

Elizabeth Lady Lawrence, Burford (Orchid-grower, Mr. W. H. White), showed a spike of the rare hybrid, Vanda Maronii (suavis × teres), with twelve large rose and white flowers.

J. Gurney Fowler, Esq. (gr. Mr. J. Davis), showed the new Cattleya Bronze King (Davisii × Dowiana aurea), shaped like C. Davisii, but broader, especially in the lip. The flowers are bronzy-yellow, with a fine reddish veining, and magenta markings on the lip; and a yellow Laelio-Cattleya Thyone.

R. G. Thwaites, Esq., Chessington, Streatham (gr. Mr. Hamington), sent Sophro-Cattleya Blackii var. The Cardinal and var. Prince of Orange, two forms of his cross between S. grandiflora and C. Hardyana of different shades of scarlet.

Messrs. Sander and Sons, St. Albans, sent Miltonia Bleuana General Joffre, an almost circular flower over 4 inches across, white with the inner halves of the petals pale violet, the lip having a red-brown ray at the base.

Messrs. Charlesworth and Co. sent Oncidium bicallosum splendidissimum, and aureum of a clear yellow colour; also Coelogyne Veitchii with two pendulous racemes of white flowers.

Messrs. Hassall and Co., Southgate, showed Cattleya Sylvia citrina, a pretty form of their cross between C. Fabia alba and C. aurea, all of which are of fine shape and very fragrant. Also a good C. Venus.

Messrs. Flory and Black, Orchid Nursery, Slough, showed a fine rose-coloured Brasso-Cattleya Ilene, with yellow disc to the fringed lip.

Mr. Geo. Little, Groombridge, showed an Oberonia near to O. myriantha, with two long racemes of small brownish flowers.

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq. (in the chair), Messrs. W. Bates, H. H. Williams, Edwin Beckett, H. Markham, Horace J. Wright, E. A. Bunyard, A. D. Tucker, A. Bullock, J. Davis, and C. G. A. Nix.

Messrs. H. Cannell and Sons, Eynsford, Kent, staged 60 dishes of Apples and Pears, for which a Silver-gilt Banksian Medal was awarded. The quality was exceptionally good; most of the fruits were coloured to an intense degree, and even varieties that are generally devoid of bright tints had a ruddy flush, whilst some carried a heavy bloom. In addition, they were of large size and well staged. The more notable varieties of Apples were Cox's Orange Pippin, Rival, Wadhurst Pippin, Chas. Ross, Allington Pippin, James Grieve, Baumann's Reinette, Blue Pearmain, Twenty Ounce, Bramley's Seedling, Gascoyne's Scarlet Seedling, Peasgood's Nonesuch, Warner's King, and Ben's Red. Of Pears, Doyenné du Comice and Pitmaston Duchess were exceptionally good.

Rev. McMurdie, Woburn Park, Weybridge (gr. Mr. A. Basile), contributed a collection of Pears in 57 varieties. The fruits were well developed specimens, the best varieties being Fondante d'Automne, Glou Morçeau, Abbé Fetel, of curious, gourd-like shape; President Roosevelt, Durondeau, Beurré Hardy, Beurré Clairgeau, Princess and Marguerite Marillat. (Silver-Gilt Knightian Medal.)

A collection of hardy fruit was shown by the Essex Education Committee from the school garden at Purfleet. There were Pears, Plums, Apples, Grapes, and Nuts. The best fruits were Pears, especially the varieties Pitmaston Duchess and Durondeau. (Bronze Knightian Medal.)

Messrs. Herbert Chapman, Ltd., Rotherside Gardens, Rye, showed 60 varieties of Marrow raised from Table Dainty and Custard, two of the finest flavoured Vegetable Marrows. The fruits were of all sizes, shapes, and colour, and might have been mistaken for a collection of ornamental gourds. (Silver-gilt Knightian Medal.)

NATIONAL CHRYSANTHEMUM.

October 7.—The first Committee meeting of the season was held on Wednesday last in the Essex Hall, Strand. Several novelties were submitted for award, three receiving First-class Certificates and two Awards of Merit. Groups of cut blooms were staged, and six medals were awarded.

First-class Certificates.

General French.—A medium-sized bloom of great attraction. The tips of the broad chestnut-crimson-florets curl inwards disclosing the bright golden reverse, making a fascinating contrast. The flowers, which average 7 inches across, are rather flattish in appearance, and, as they are set on stout stems above dark green glossy foliage, are very decorative. Shown by Messrs. Lowe and Shawyer.

Delight.—In general appearance this variety is suggestive of the well-known Cranford Pink, but it is rather larger, the florets are longer and more pointed. The colour is an attractive shade of silvery pink. Also shown by Messrs. Lowe and Shawyer.

Thos. Beeson.—A very large Japanese variety; the flowers measured 10 inches across and 8½ inches deep. The long, unusually broad florets curl upwards at the tips.

Commended.

Hestonia.—This variety has a superficial likeness to Eldorado, but differs in having longer and broader florets. The colour is buff suffused with chestnut. Shown by Messrs. Cragg, Harrison and Cragg.

Miss Edith Webb.—A single variety with rather numerous white florets of good substance. The undersides are lightly flushed with reddish purple. The flowers, which were 5 inches across, were unusually large for an early season variety. Shown by Messrs. Lowe and Shawyer.

Groups.

E. G. Mocatta, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), arranged many vases of splendid blooms. Those of Rosamond, Mrs. E. Tickle, Hon. Mrs. John Ward, and White Queen were of immense size and of the highest quality. The decorative varieties, which were represented by Virginia, Almirante, Alcalde, Cranford Pink, and others, were very charming. (Large Silver Medal.)

Messrs. Cragg, Harrison and Cragg, Heston, Middlesex, set up in the best market style and quality bunches of such valuable sorts as Mrs. Hamilton, Heston Yellow, Cranfordia (yellows), Moneymaker, Débutante (both white), and Juliet (deep bronze). (Silver-gilt Medal.)

Mr. W. Newton, The Gardens, Little Heath Wood, Potters Bar, exhibited immense flowers of Francis Joliffe amongst vases of such valuable, decorative sorts as Dolores, Almirante, and Cranford Pink, which were shown in very good condition. (Silver Medal.)

R. Barker, Esq., Southwood, Bromley, Kent (gr. Mr. J. C. Bedson), showed three blooms each of Bob Pullen and Mrs. T. Stephenson of exceptionally large size and quality.

Mr. J. Emberson, Grove Road Nursery, Walthamstow, staged sprays of market varieties. The blooms were fresh, of good colour, and borne on the long stems which are so desired by decorators. The varieties Lentz, Almirante, and Le Pactole were especially noteworthy. (Large Silver Medal.)

Messrs. Wells and Co., Merstham, placed half a dozen very large Japanese blooms in the centre of a group of small-flowered varieties. The large blooms, which were of such sorts as Daily Mail, Mrs. J. Gibson, and Hon. Mrs. John Ward, were exceedingly good. The chief decorative varieties were Golden Firebrand, Crimson Polly, Bronze Goacher, Verona, and Kitty Riches. (Large Silver Medal.)

Mr. Norman Davis, Framfield, Sussex, exhibited a very attractive group of large-flowered varieties, which were brightened by sprays of Barberry, Scarlet Oak, and ripening shoots of culinary Asparagus. Large stands of the Golden Japanese variety Mrs. Thomas Stevenson, Hon. Mrs. John Ward (primrose yellow), and White Queen contained many large blooms of good form and substance. Other varieties, which were shown in smaller quantities, were William Turner, Queen Mary, Cranfordia, and Cranford Pink. (Silver-gilt Medal.)

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands for the week ending Oct. 3 is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

A deep depression which travelled eastwards beyond Scotland to Norway on the night of September 27 caused high winds and gales from west to north-west on many parts of our Northern and North-eastern Coasts, and over the North Sea. The wind also blew with gale force locally on isolated parts of the North-east Coast on the day following, as well as on the Eastern shores of the North Sea. In Scotland the progress of the disturbance was accompanied by rain, as much as an inch falling at Lerwick. Other depressions over Norway later in the week caused further rain in the north, but over all the more southern parts of the Kingdom the pressure distribution was almost continuously anticyclonic and the weather generally dry, with light or moderate winds from some point between west and north-west. The southern districts of England and Ireland lay, however, near the central portion of the anti-cyclone, and the direction of the winds was at times very variable.

THE WEATHER IN WEST HERTS.

Week ending October 7, 1914.

Sixteen Days Without Rain.—The weather of the past week was rather variable in temperature. On the first day the temperature in the thermometer screen rose in the middle of the day to 66°, and on the previous night fell to 36°, giving the unusual range in temperature at this time of year of 30°. On the same cold night the exposed thermometer registered 3° of frost. The ground is at the present time at about a seasonable temperature at both one and two feet deep. No rain has fallen for over a fortnight, and there has been no percolation of rainwater through either of the soil gauges during the same sixteen days. The sun shone on an average for four hours a day, which is three-quarters of an hour a day longer than is usual in the first week in October. Light airs and calms as a rule prevailed during the week—the prevailing direction of those winds being almost entirely some point between north and west. The mean amount of moisture in the air at three p.m. fell short of a seasonable quantity for that hour by three per cent.

SEPTEMBER.

Rather Warm, and Very Dry and Sunny.—Taking the month as a whole the temperature was rather above the average. The first ten days were exceptionally warm, while the nights, on the contrary, proved rather cold. During the rest of the month, however, both the days and nights were rather below the average in temperature. On the warmest day the temperature in the thermometer screen rose to 83°, which is an unusually high reading for the month, and on the coldest night the exposed thermometer registered 7° of frost. Only once before in the past 28 years has so low a temperature as this been recorded here in September. Rain fell on only ten days, and to the total depth of only 1¼ inch—which is less than half the average quantity for the month. The sun shone on an average for seven hours a day, or for 2¼ hours a day longer than is usual in September—making this, with two exceptions, the sunniest September during the 28 years over which my observations at Berkhamsted extend. The winds were as a rule rather high for the time of year, but in on hour did the mean velocity exceed 20 miles, direction W.N.W. The mean amount of moisture in the air at three o'clock in the afternoon fell short of a seasonable quantity for that hour by as much as 12 per cent.—indicating a drier atmosphere with two exceptions than any recorded here in September during the past 28 years.

THE SUMMER RAINFALL.

During the summer half of the present drainage year ending September, 9¼ inches of rain fell, which is 4¼ inches in defect of the average quantity for the same six months in the previous 58 years. Of the six months, June was the only unseasonably wet one. With five exceptions this was the driest summer half of the drainage year during the past 58 years.—*E. M., Berkhamsted, October 7, 1914.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* write the names of persons and places as legibly as possible. *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. B. H. Baker, for the past four years Gardener to H. W. Wilberforce, Esq., Carr Head Hall, Cross Hills, Yorkshire, as Gardener to Hy. Ayrton, Esq., Bankfield, Bingley.

Mr. A. J. Solley, for more than three years Gardener to A. C. De Wilson, Esq., Madresfield Grange, Malvern, Worcestershire, as Gardener to A. C. Bechstein, Esq., Davenport Neck, New Rochelle, New York.

Mr. Bernard Coleman, for two years as Foreman at the Duffryn Gardens, Mountain Ash, Gardener to J. M. Berry, Esq., Gwaelodygarth House, Merthyr Tydfil, Glamorganshire.

TRADE NOTES.

Mr. Percy F. Bunyard, for fifteen years traveller for Mr. G. H. Richards (horticultural sundriesman), has formed a business of his own of a similar nature at 57, Kidderminster Road, Croydon.

We are informed that Mr. John Weathers, having taken over a market garden at Park View, Isleworth, proposes to make it a school of market gardening, where he will teach the business of growing, grading and packing fruits, flowers and vegetables for market. He will also conduct a business as general agent for seeds, bulbs, plants, manures, insecticides, etc.

Obituary.

John Gould Veitch.—It is with very great regret that we record the death, at the early age of forty-five, of Mr. John Gould Veitch, of the firm of J. Veitch and Sons, Ltd., Chelsea, on the 3rd inst. The deceased was the second and only surviving son of the late John Gould Veitch (1839-1870), younger brother of James Herbert Veitch, whose death occurred in 1907, and nephew of Sir Harry Veitch, the present head of the firm. He was educated at Westminster School, from whence he proceeded to Trinity College, Cambridge, and finally obtained his M.A. degree. He also attained a good deal of celebrity at football. He won his Blue—a difficult matter in those days—and played for his University, afterwards becoming a member of the Corinthian Club, and playing on behalf of England. He took, however, a considerable part in the management of the Chelsea nursery business. It will be remembered that in 1898 the business was formed into a private limited company, and two years later Mr. Harry J. Veitch (now Sir Harry) retired from the management. At this juncture Mr. James Herbert Veitch became managing director, and Mr. John Veitch (now deceased) secretary. For many years before his death Mr. John Veitch had been unable to follow active pursuits or mingle much in society, owing to lung trouble and persistent deafness. His misfortunes, however, were far from preventing him from feeling sympathy for those of others, and he was extremely kind and generous towards all with whom he came in contact, seeming to find his chief pleasure in helping others and consoling those in trouble. His own sufferings he bore to the end with remarkable courage and patience. He leaves a widow and one child; beyond these, his nearest relatives in England are his uncle, Sir Harry Veitch, his cousin, Mr. H. Morgan Veitch (of Messrs. Rutter, Veitch and Bond, solicitors), and Mr. P. C. M. Veitch, of Exeter. The interment took place at Putney Vale Cemetery on Wednesday last, in the presence of his widow. Mrs. Herbert J. Veitch, Sir Harry Veitch, and other relatives and friends, including many members of the staff of the firm.

W. A. Herd.—We regret to record the death, which occurred lately in Sydney, New South Wales, of Mr. W. A. Herd, a former partner in the well-known firm of Herd Bros., nurserymen, Penrith. For a considerable period Mr. Herd took part in the business in Penrith, and was well known in the neighbourhood. His death was due to diphtheria.

H. M. Arderne.—In a letter received from South Africa by Mr. George Paul, of the Old Nurseries, Cheshunt, the death is announced of Mr. H. M. Arderne, of Clarmont, Capetown. Mr. Arderne's most interesting garden has been illustrated from time to time in the *Gardeners' Chronicle*, notably in supplements issued with the numbers for February 16, 1895, and April 16 and May 21, 1898. He had for many years devoted much time and attention to securing exotic plants which would thrive in the Cape climate, and specimens of many Australian, Indian, and South African species may now be seen growing side by side with British trees and shrubs. Mr. Arderne was instrumental in introducing into English gardens the species Watsonia Ardernei, named in his honour. His loss to gardening circles in South Africa will be a severe one.

J. F. Donoghue.—We very much regret to learn of the death in a nursing home, on the 6th inst., after a brief illness, of Mr. J. F. Donoghue, for many years gardener to Joseph Pickersgill, Esq., Bardon Hill, Weetwood, Leeds. Mr. Donoghue was a successful grower and exhibitor of plants, and was greatly esteemed by all horticulturists in the Leeds district.

Answers to Correspondents

Dislodging Roots of Trees: *D. V. M.* As you intend to plant other trees in your garden it would be advisable to extract the roots of the old ones at the time of felling. If left in the ground the old stumps would almost certainly become a prey to fungus diseases of various kinds, which they would communicate to the young trees. Moreover, the stumps will be easier to extract in felling than at any other time, as the fall of the tree always forces the roots a certain distance out of the ground, especially if the roots are previously cut all round. It would, of course, be possible to extract the stumps later by blasting, but this is a difficult and dangerous operation, only to be undertaken by an experienced person.

THE LATE JOHN GOULD VEITCH.

Fasciated Tropaeolum.—*J. M.* We thank you for sending the specimen of fasciated Tropaeolum. The example is interesting, but not quite so remarkable as that sent by Mr. Charles Prentis in February of this year, which was illustrated in our issue for February 21, 1914, p. 134.

Names of Fruits: *W. M. W.* 1, Gooseberry Apple; 2, not recognised, very small fruit; 3, Betty Geeson; 4, Balchin's Pearmain; 5, Aston Town; 6, Old Hawthornden; 8, Beauty of Kent; 9, Passe Colmar; 10, Api Etoillé; 11, 13, and 14, Dumelow's Seedling (syn. Wellington); 12, King of the Pippins; 15, Fondante de Cuerne; 16, Duchesse d'Angoulême; 17, Doyenné de Boussoch; 18 and 14, Marie Louise. 1, 3, 4, 11, 13 and 14 are late keepers; the others are mid-season varieties. Doyenné de Boussoch soon goes bad at the core after gathering.—*E. P.* 1, Rosemary Russet; 2, Cullen: 3, deformed fruit; 4, Blenheim Pippin; 5, Manks Codlin; 6, Ashmead's Kernel.—*H. G. Purvis.* White Bullace.—*R. D., Greenhouse.* 1, Fertility; 2, Winter Nélis; 3, Beurré Hardy; 4, Pitmaston Duchess; 5, Beurré Capiaumont; 6, Conseiller de la Cour; 7, You send two fruits labelled 7; the large one is Marie Louise, the small one Bergamotte Esperen; 8, Duchesse de Bordeaux.—*Bristol.* Pear, Beurré Clairgeau; Apple, not recognised—probably a local variety.—*R. H. W.* Lord Palmerston.—*G. B.* 1, Beurré d'Amanlis; 2, Colmar d'Eté; 3, Monarch; 4, Manks Codlin; 5, Hollandbury.—*Enquirer.* 1, Hanwell Sonring; 2, Blenheim Pippin; 3, American Mother; 4, Prince Albert; 5, Golden Noble; 6, Castle Major.—*F. E. Jones.* Catshead.—*H. T. S.* 1, Manks Codlin; 2, Newton Wonder; 3, not recognised; 4, Dumelow's Seedling (Wellington); 5, Sturmer Pippin; 6, Stirling Castle.—*J. M.* Some of the numbers were illegible. 11, Monarch; 40 and 20, Beurré Diel; 3, Glou Morçeau; 43, Bergamotte d'Hollande; 40, small green fruit, probably Beurré Bachelier.—*Summerfield.* Plums: 1, Blue Prolific; 2, Coe's Golden Drop. Pears: 1, Conférence; 2, Beurré Capiaumont. Apples: 1, Prince Bismarck; 2, Ribston Pippin; 3, Cox's Orange Pippin; 4, Newton Wonder.—*F. H., Chilton.* 1 and 5, Cox's Pomona; 2, Warner's King; 3, Beurré Bachelier; 4, Cellini; 6, Lady Henniker; 7, Minchull Crab; 8, Gravenstein; 9, 11, 12 and 16, Pitmaston Duchess; 10, 15 and 22, Beurré d'Amanlis; 13, 14 and 25, Beurré Hardy; 17 and 20, Louise Bonne of Jersey; 18, Williams' Bon Chrêtien; 19, Marie Louise d'Uccle; 21, Beurré Clairgeau; 23, Beurré Capiaumont; 24, Beurré Diel; 26, Northern Dumpling; 27, Ribston Pippin.—*R. W. L.* 1, Malster; 2, Ecklinville Seedling; 3, Mabbot's Pearmain; 4, Sturmer Pippin; 5, Duchess of Oldenburg; 6, Winter Hawthornden.—*E. W. S.* The numbers were detached from the fruits. Send fresh specimens wrapped separately in paper.—*D. Diplock.* 1, Belle de Boskoop; 2, Newton Wonder; 3, Lady Henniker; 4, Prince Bismarck; 5, Allington Pippin; 6, Ecklinville Seedling.—*Miss Baird.* 1, Beurré Diel (November); 2, specimen decayed; 3, Beurré Hardy (November).—*W. E. P.* 1 and 5, Cellini; 2, Golden Noble; 3, Bismarck; 4, Bramley's Seedling; 6, Tower of Glamis.—*Z. E. S.* 1, Graham; 2, Norfolk Bearer; 3 and 5, French Crab; 4, Manks Codlin; 6, Lemon Pippin.

Names of Plants: *G. H.* The orange-scarlet, tubular-shaped flower is Tecoma radicans; the yellow flower Cassia corymbosa.—*W. H. W.* 1, Acer rubrum; 2, Parrotia persica; 3, Juniperus chinensis.—*L. Squibbs.* 1, Cuscuta sp. (too scrappy to identify); 2, Helichrysum petiolare; 3, Centaurea Urvillei.—*R. V. and Son.* Panicum miliaceum (Millett).—*W. and S.* Artemisia campestris.—*I. M.* Leontodon autumnalis.

Sumach and Ailanthus: *The Workers' Educational Association.* Ailanthus can be readily distinguished from the pinnate-leaved Rhuses or Sumachs by making a small incision in the stem. In the case of the Ailanthus no exudation will be noticed, but in the Rhus a thick, rather sticky sap will appear from the wound. Some species of Rhus are tapped regularly in China and Japan for the sap, which furnishes the celebrated varnish used for lacquer work. The leaves are quite distinct. The leaflets of the Ailanthus have a comparatively small number of teeth which are widely separated, and each tooth is terminated on the under side by a rather conspicuous gland or swelling, whilst in Rhus typhina, the commonest of the pinnate-leaved Sumachs, the margins of the leaves are rather closely and evenly toothed, and the teeth are not glandular as in Ailanthus. Moreover the bark of Rhus is hairy, whilst that of Ailanthus is smooth.

Viola David Simpson: *Viola.* This is an old variety which was included in many catalogues some years ago, but is now seldom seen. The flower had a lavender ground marbled with purplish crimson of several shades. It was not unlike Duke of Argyll, but was not quite so dark.

Communications Received.—R. A. W.—W. W.—B. of A.—A. C. B.—R. I. L.—G. A. U.—W. M. W.—B. W.—E. B.—G. W.—A. H.—G. C.—E. B.—J. W.—A. B.—T. S.—W. C., Edinburgh—W. W., Kew.—G. E. D.—James S. D.—J. E.—Sir H. V.—Dr. A. J.—S. B.—C. T. D.—H. W.—R. W. D.—F. H.—S. H. C.

THE
Gardeners' Chronicle

No. 1,451.—SATURDAY, OCTOBER 17, 1914.

CONTENTS.

Agriculture at the British Association .. 257
Agricultural Education Conference 262
American Apple crop .. 263
Antwerp florist's experiences 264
British Association in Australia, the .. 262
Calceolarias, herbaceous 264
Cashew nuts 263
Dulwich Chrysanthemum Show 267
Eucalyptus Globulus flowering in the open 267
Farrer's, Mr. Reginald, explorations in China 258
Florists' flowers—
  Early-flowering Chrysanthemums .. 265
Fruit trees, the banding of 266
Fruit trees, the treatment of 259
Islands of vegetation .. 264
Land cure for unemployment, a 266
Land reclamation and unemployment .. 262
Market fruit garden, the 265
Mawley, Mr. Edward: resignation of secretaryship of N.R.S. .. 264
Melons, a good crop of 267
Obituary—
  Arderne, H. M. .. 269
  Kirkpatrick, W. B. .. 269
  Towerson, Thomas E. 269
Orchid sales 264
Peach, fruits of the double-flowered .. 267
Plants, new or noteworthy—
  A new hybrid Poplar 257
  Streptocarpus Blythinii 258
Potash manures, the shortage of 263
Rosary, the—
  Good and bad weather Roses 265
R.H.S special fruit show 262
Scotland, notes from .. 266
Societies—
  National Dahlia .. 268
  National Sweet Pea.. 267
  Royal Horticultural (Scientific Committee) 267
  Royal Hort. of Ireland 268
  Scottish Hort. .. 268
Strawberries in India.. 263
Torquay Public Gardens 267
War items 264
Week's work, the—
  Flower garden, the .. 261
  Fruits under glass .. 261
  Hardy fruit garden .. 261
  Kitchen garden, the.. 260
  Orchid houses, the .. 261
  Plants under glass .. 261
West Indian Lime juice and Orange oil .. 264

ILLUSTRATIONS.

Arderne, H. M., portrait of the late 270
Calceolarias at Chipstead Place, Kent 263
Mawley, Mr. Edward, portrait of 264
Populus angulata and P. trichocarpa, 259; P. generosa 258
Streptocarpus Blythinii 260
Winter moth, the.. 266

AGRICULTURE AT THE BRITISH ASSOCIATION.

A HAPPY choice was made by Mr. A. D. Hall, President of the Agricultural Section, in selecting for the subject of his address "The Winning of New Land for Agriculture."

In dealing with this subject Mr. Hall confined his attention to "bad lands," these outliers from cultivated areas so long neglected, and now being pressed into the service of man owing to the fact that the fertile lands are not broad enough to feed the world's inhabitants.

The opening up of new lands follows lines of least resistance—first the rich fertile soils are chosen, and not till they are in full occupation do the settlers turn their attention to land which requires special cultivation—irrigation and the like. The rapid opening up of one country reacts on the agriculture of another; thus, in the eighties and nineties of last century, vast Wheat areas were developed in America, Argentina, and Australia, and, in consequence, much of the land in cultivation in the British Isles fell back from arable to cheaper pasture. Now, when growth of population of the new countries is surpassing production, prices are rising and the agriculturist of the homeland—and of Europe generally—is turning his attention to the poorer land with the view to making it more productive.

Such land is plentiful: it exists by the thousand acres within fifty miles of London; it is to be found in the most intensively cultivated countries of Europe—Holland and Belgium. Most work in the direction of land-reclamation has been done in Germany, where a Government Department exists for the colonisation of the ten million acres of uncultivated land which exist in the Empire. It is to be observed that production may be increased not only by reclamation of waste or amelioration of poor land, but by the better cultivation of good land. The possibility in the latter direction may be judged from such a fact as this, that the average yield of Wheat per acre in England is thirty-two bushels, whereas a good farmer expects forty; the average for Mangolds is so low as twenty tons per acre, whereas, with good farming, twice as much may be expected.

Since it must be a slow process to educate the less skilled farmer, there is no reason why the reclamation of poor land should not go on side by side with the effort to increase the productivity of the land at present under crops. An analysis of the factors which determine fertility shows that distribution and amount of rainfall occupy first place, and next to rainfall comes the factor of temperature. Excessive rainfall with imperfect drainage is one great cause of infertility, as is shown by the wide areas of peat in the bogs of Ireland and the moors of eastern England. Next in importance is the texture of the soil; even with suitable rainfall and temperature a coarse, sandy soil remains heath land and resists the efforts of the cultivator. Lastly, and of the utmost importance to fertility, is the presence of lime (calcium carbonate). Without an adequate supply of lime the nitrogen-fixing organisms of the soil (Azotobacter sp.) fail to carry on their beneficent work, and, indeed, it has been shown that fertility runs parallel with the content of lime in the soil. All the black soils famed for their fertility are calcareous, and they owe their richness to the activity of nitrogen-fixing organisms and to the fact that the moderate annual rainfall, inducing the growth of grasses, permits of an annual fall of vegetation sufficient to provide organic food for the nitrogen-fixing bacteria.

Much of the peat accumulations in Great Britain are due to the acidity of the soil, in turn due to the absence of lime. In such soils the remains of plants accumulate owing to the checking of the bacterial agents of decay.

After dealing with the problems of dry farming and showing incidentally that hedges may have no inconsiderable value in preventing loss of water by evaporation, Mr. Hall turned to consider land-reclamation in North-Western Europe. Two main types of waste land occur, the peaty and the sandy areas. The former are characterised by excess of water, deficiency of mineral salts, a strongly acid reaction, but potential wealth in nitrogen. The German mode of reclamation, which has brought some 100,000 acres of peaty land under cultivation, consists in the following procedure:—Drainage is carried out by open ditches, or, better, by pipes, and the water table kept three feet from the surface. Where peat is marketable, reclamation often begins by cutting the peat, the upper spongy layers being thrown back after the hard deeper layers have been dug. The underlying sand is brought up, spread over the spongy peat to a depth of four or five inches, and mixed by cultivation with the spongy peat. Where sanding is not possible, drainage is the first step to reclamation, and this is followed by the removal, little by little, of the hard lower peat. Next comes manuring, which in true peat-bog land takes the form of adding marl or ground chalk, which is followed by an application of basic slag and an equal amount of kainit. The process is repeated in the second year, and a nitrogenous fertiliser (nitrate of soda) is also added.

By these means a good meadow herbage is established in a short time.

With respect to heath land, which owes its poverty to the coarse, sandy texture of the soil, the reclamation consists in clearing shrub growth, burning off the roughest vegetation and turning over a shallow layer in summer. The land is then manured with ground chalk, or marl or lime, and basic slag and kainit, and after a seed bed has been formed, Lupins are sown and ploughed in at flowering. The Lupins fix nitrogen (by means of their root-nodules) and supply the humus for making fertile soil. A second crop of Lupins is taken or the land put at once to an ordinary rotation of Rye, Oats, Potatos and Clover.

Reclamation of this kind costs from £5 to £6 per acre; the value of the land before reclamation is from £5 to £7; the reclaimed land after a few years' cultivation would sell at from £20 to £30.

As to the possibility of adopting similar methods in England Mr. Hall is not too sanguine. The State in Germany takes a far-sighted view, and so do the Municipalities. They bear part of the cost, for example, that of the drainage and road-making. But the work of reclamation is hard, and men may not be available, and, further, forests bordering the reclaimed land in Germany provide necessary occupation for the small holders engaged in the cultivation of the reclaimed land. Nevertheless, and in spite of our different conditions, Mr. Hall concludes that the reclamation of heath land in England is a sound commercial venture.

NEW OR NOTEWORTHY PLANTS.

A NEW HYBRID POPLAR.

IN a paper* which I read at the Linnean Society in April, 1910, I showed that the great vigour of the Huntingdon Elm, Lucombe Oak and Black Italian Poplar is due to the fact that these trees are hybrids of the first generation. Other valuable first-crosses are the London Plane, Common Lime and Cricket-bat Willow. All these fast-growing trees are of accidental origin, the result of seed produced by the fertilisation of the flowers of one species by the pollen of another species, wafted by the wind or carried by insects. Impressed by these facts, I have been making, during the past four years, experiments in the production of new trees by hybridisation in the hope of obtaining fast-growing kinds that would produce timber rapidly.

---

* *Jour. Linn. Soc. (Bot.)*, XXXIX. 290-300 (1910). See also *Gardeners' Chronicle*, XLVII. 257, 276 (1910). A German translation of this appeared in *Mitt. Deut. Dend. Ges.*, 1910, pp. 75-81.

A full account of these researches will be published shortly as the results are encouraging and may perhaps induce enterprising firms to take up similar work on commercial lines. Interesting Ash, Alder and Poplar hybrids have been made. With the Ash hybrids, which are perhaps the most important, considerable patience is required, as the seed "lies over" for a year, and seedlings do not come up till two years after the date of pollination. The Poplar hybrids are more advanced, as seedlings are obtained in the same season that the pollination is effected. One of these, which may be conveniently named Populus generosa, has already shown such astounding vigour that it merits immediate description. It is remarkable not only for its rapid growth, but also for its handsome appearance, having beautiful large leaves with conspicuous red veins. It deserves to be propagated as it promises to rival, if not excel, the remarkable hybrids at Metz, Populus Eugenei and P. robusta, described in this journal last July, pp. 47 and 66, fig. 26.

The history of the new hybrid Poplar is as follows:—In March, 1912, a pistillate Carolina Poplar (Populus angulata) at Kew was crossed with the pollen of P. trichocarpa, of which there is a fine specimen, then sixteen years old, in that garden. From the few seeds, which ripened towards the end of June and were sown immediately, there were raised at Cambridge four seedlings. These attained about 2 inches in height by the end of October, 1912. Starting next season as tiny plants in good garden soil at Glasnevin, they grew remarkably in 1913, reached by the end of that year 3 feet 6 inches, 3 feet 1 inch, and 2 feet 11 inches in height, and were very uniform in vigour and in appearance. Two were transplanted last winter, and on that account have been temporarily checked in growth. The two which had not been disturbed (fig. 102) throve amazingly in 1914, one plant continuing to grow till the end of July, when it measured 7 feet 6 inches in height, the other only finishing its growth by the end of September, when 10 feet 1 inch of total height was attained.

The parents of this hybrid are wide apart, belonging to different sections of the genus. P. angulata[†] is a Black Poplar, slow in growth in England, with broad leaves (fig. 103, No. 1), green on both surfaces, usually cordate at the base, and girt around the margin with a narrow translucent border; petioles laterally compressed; buds slightly viscid, scarcely odorous. P. trichocarpa is a fast-growing Balsam Poplar, native of the Pacific Coast of the United States, with viscid buds, giving off a strong balsamic odour; leaves (fig. 103, No. 2), narrow, very white beneath, without a translucent border, never cordate; petioles cylindrical. Populus generosa[‡], the new hybrid (fig. 103), is intermediate between the parents as regards the width and colour of the leaves, their under surface being pale grey; but it resembles P. angulata in the leaves being coarsely serrate, often cordate, and always surrounded by a translucent border. Their rounded petioles are nearly identical with those of P. trichocarpa.

It may be mentioned that some catkins of P. angulata (same tree at Kew) pollinated on the same day by the English Black Poplar (P. nigra betulifolia) gave another set of seedlings, totally distinct in appearance and remarkable for their want of uniformity of vigour. The two best of these seedlings, though very flourishing, are considerably inferior to P. generosa. *A. Henry.*

STREPTOCARPUS BLYTHINII.

STREPTOCARPUS BLYTHINII is one of several hybrids raised recently in the Botanic Garden, Cambridge, to which I referred in the issue for September 12, p. 192. As in the case of S. Banksii, S. Wendlandii is one of the parents, but whereas it was the male progenitor in S. Banksii, it was used as the female parent in S. Blythinii, S. cyaneus being the male parent. S. cyaneus (S. Moore, in *Journ. Bot.*, 1905, p. 172; *Botanical Magazine* (1913), tab. 8,521) differs from S. Rexii in having a much shorter corolla tube, less tapering and distinctly dilated at the throat, and the scape is two instead of one flowered. The rosy colour of the limb is also distinct. The two hybrids, whilst opposite in general appearance, have a similarity in foliage. Both have derived strength and size of leaf from S. Wendlandii. There is, however, a difference in that S. Blythinii produces the larger number of leaves.

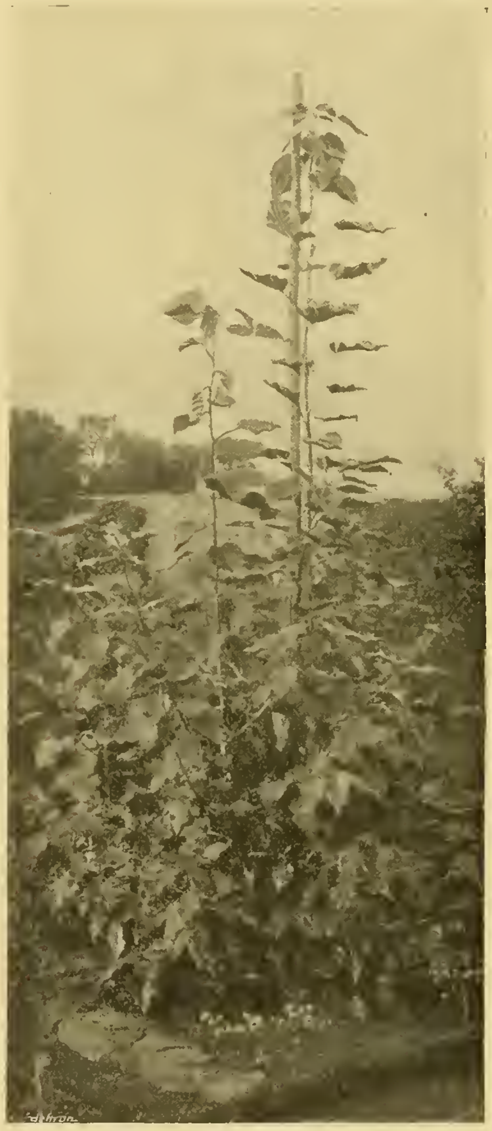


FIG. 102.—POPULUS GENEROSA, NEW HYBRID POPLAR, 27 MONTHS OLD FROM SEED.

S. Blythinii makes a very pretty specimen. The number of leaves varies from two to five, the largest in one case is 15 inches long with a breadth of 9 inches, and another leaf on the same plant is 1 foot long by 7 inches in breadth; they are green beneath, but usually with colour derived from S. Wendlandii, in some instances reddish towards the tip, in others with clouding of colour here and there.

S. Banksii has stout and bold inflorescences with fewer and larger flowers than S. Blythinii, which has a larger number of less stout inflorescences and a greater profusion of smaller blooms. The illustration (reproduced in fig. 104) is from a photograph taken in the Cambridge Botanic Garden. The cross was made by Mr. J. Blythin, chief assistant in the plant houses, and I have pleasure in naming the plant after him.

The number of inflorescences is from 9 to 10, and each carries from 5 to 14 flowers. The flower-spikes are about 14 inches high, and a succession of inflorescences and flowers continues for a considerable time. The flowers are about 1½ inch in breadth with a tube about 1 inch long. The colour varies in its intensity and may be described as lavender or bluish-purple. The petals are marked with dark purple stripes, as shown by the illustration, and there is also a pale yellow mark in the lower part of the throat and tube, this colour being derived from S. cyaneus. The lower petal inclines to turn up a little; in some cases its tip appears to remain held beneath the stigma, or the sides may be somewhat infolded. This is a feature not possessed by either parent. S. Wendlandii, the female parent, is well known as one of the finest of the genus, being remarkable for the immense size of its leaf and profusion of flowers. S. cyaneus somewhat resembles S. Rexii. This species has numerous growing points and the plant makes a tuft. The leaves are narrow, and in the case of a small plant about 7 inches long by 1½ inch in breadth. The flowers have a bright pinkish or rosy-purple limb, a white throat and tube, with a few marks of stronger purple in front. Down the throat also is a yellow mark, which appears, as I have stated, in the hybrid. *R. Irwin Lynch.*

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

III.—A THIRSTY LAND.

UNUTTERABLY arid are many of these Chinese ranges. On all sides their sere flanks are riven with ravines. Yet down these no water pours except during the rainy season, but for the rest of the year the corrugated hills are brown and dead, except where diligence has carved out laps of culture, or the exuding darkness of a coalfield lies over their wrinkled slopes like the shadow of a cloud. The higher ridges, indeed, offer promise of verdure sometimes, so towards these we toiled, up paths and slopes that make the Cima Tombea a valetudinarian's stroll. The greenness, however, proved only the pitiless greenness of Berberis and other small fry among scrub. Paeonies gleamed here and there in the cooler folds below, and on the warm slopes waved arching sprays of a most beautiful Rose, which begins by having thorns so thick and dense that one takes it for R. sericea pteracantha until the long ranks of blossom open and reveal five-petalled, deliciously fragrant blossoms of pure yellow, much more closely akin to those of R. xanthina. Then, but only on the very hottest and steepest of the blazing rocks below, may be seen the beginnings of a small, grey-leaved shrub which may be a Leptodermis, but which certainly, along its bowed sprays and at their end, produces heads of rose-mauve flowers of delicate colouring and thick crystalline texture, vaguely suggesting those of a Lantana. The prettiest flower, however, on those thirsty hills is a pretty little grassy-leaved white Iris, apparently of Pavonia relationship, which runs about among the coarsest herbage and produces wide galaxies of its ephemeral flowers, with the six segments so rounded and occasionally so equal as to make almost the effect of a small and starry Narcissus poeticus. The falls, however, have a delicate peacock eye of gold, outlined with a rim of blue that sometimes faintly suffuses all the flower. Hanging on the edge of a tussock in a loose clump of blossom, it often makes one think of a white form of Gentiana verna.

[†] See *Gardeners' Chronicle*, July 18, 1914, p. 46.

[‡] *Populus generosa*, A. Henry, hybrida nova inter *P. angulatam*, Aiton, ♀, et *P. trichocarpam*, Torrey et Gray, ♂; foliis mediis, amplis, subtus nec concoloribus nec albis sed incanis, saepe cordatis, semper pellucide marginatis; petiolis teretibus.

* The previous articles by Mr. Farrer were published in the issues for September 12 and 26.

But in the valleys below aridness is the rule. True, each village is an oasis of greenery, and where they can the people till and sow. Soon, however, the track leads on into country where tillage and village alike are impossible to conceive; up and down one toils over the rocky cliffs and buttresses that hedge a wide warship-coloured river, roaring swiftly along between huge walls and precipices and cloven gorges, through mountains that suggest those of Provence, but that they are higher and drier and more hopeless. To make their matter worse, the water-course gullies on high often glimmer with slabs of mica or quartz that give to those below a cruelly delusive effect of moisture, and their only flower is an Asphodeline, dim and dingy of its kind, whose sordid spikes bespatter all the vast mountain-side like a peppering of pale and ghostly sparks. But that its leaves are now developing, this spring-blooming plant exactly recalls a cousin which I found in autumn once on the Soros at Marathon. Where the gorges widened out, however, the villages were rich in the scarlet sparks of Pomegranate lurking amid the greenery, and Orange blossom shed its glorious cool fragrance in rivalry with the Lily-sweetness of Melia Azedarach, so ungraceful and gawky in its stiff boughs, each crowned beneath the Ash-like terminal tuft of leaves (the whole tree is like an Ash), with crowded loose spikes of pale or purply stars, most delicious to the nose. And in the wide shingles of the river a long-spired lax and very graceful Hedysarum makes fine waving tussocks of rich crimson, while over one rock beside the water hung a curtain of Decumaria, hidden beneath its heads of creamy, Jasmine-like blossoms, twisted and starry, rather indeterminate in colour and rather sickly in scent.

The Higher Hills.

Ere long, however, the way departed up into ranges where moisture clearly prevailed, and a new river was fed by real becks, descending on either side from wooded mountains. The lower stony slopes were piled with snowy or bluish mounds of Sophora viciifolia, Osteomeles was like Hawthorn in its masses, here and there flamed Caesalpinia like a Laburnum turned wrong way up, and over the cliff hung swathes of a strange, waxy-blossomed creeper, like a Hoya, while the ground was carpeted with glowing crimson Strawberries that proved on trial to be only some insipid and arid mockery of true Fragaria vesca, everywhere most generously abundant, though only hitherto in flower. Higher in the hills the deep ravine grows every moment more interesting. T. sophora has now succeeded Rosa Banksiae, in hillocks and drifts of scented snow, and Dipelta resumes its rule more luxuriant than ever. Indeed, this glen is altogether a forcing-house, so profound and sheltered in its windings that it is without confidence that one contemplates its jostled tangle of sub-tropical looking treasures, even though here be arching sun-rays of Kerria, and Ilex Pernyi as hard, hideous, horrid and hostile as when one first put down one's hoarded gold for its unlovely spikes. Suddenly, at a bend in the path, came a clinching danger signal. Here there was a sunless, windless, airless cliff that fell away in sheer slabs down to the darkness of the stream below. And all that cool and shady face was aglow with blots of crimson that made me press on with fevered feet, prognosticating a Primula, instead of which the brilliant beauty proved to be a Pleione—a Pleione with ragged lip as cherry-bright as Julia's, its mats of bulbs hugging the bare rock amid the débris of leafage, here and there over that precipitous and sombre wall. However, many safe and certain things were not lacking; amid the grove I saw two Buddleias, and Lonicera nitida or pileata was abundant by the track, pleasant in its suggestion of a small-leaved, neat-sprayed Box, but quite beyond consideration for its bunches of pallid little greenish flowers.

On the pass above there was Pinus Armandii, and on its other side I came abruptly on a cleared slope of coppice all starred with the dainty whiteness of Anemone flaccida, whose charms were enhanced by a very delicate and lovely lilac Thalictrum, while Rodgersia pinnata was sending up a purple leaf here and there amid bronzy jungles of Adiantum pedatum just unfolding. And among these were mounds of broad leaves, shining with an iridescent emerald sheen almost painful to the eye in the glare of afternoon. It was Lilium giganteum, here showing that rainbow glaze of its foliage which slugs at home so diligently prevent us from realising. After this the track descended stiffly to lower levels, and soon entered a vast gorge, upon whose sunlit walls, but only in the most impregnable position, waved glowing masses of a noble Lilac (perhaps a form or extension of S. Giraldii). Deutzias, too, hugged its crannies, while on some of its lower ledges were small mats of a most precious small Iris, midway in size and charm of blossom between I. unguicularis and I. tectorum, in stature and bloom and exquisite violet fragrance nearer to the former, but with the soft, cloudy colouring and mottlings of the latter. In the hot throat of the gorge, too, among the boulders, were bushes of a woody Buddleia, which, though possibly coarse in foliage, and possibly pallid in bloom, is yet notable for a sweet Raspberry scent of a keenness unrivalled in the race even by B. asiatica. Here the flowers seem to appear before the leaves; they are wide, loose, compound corymbs, like some lax pale Lilacs, while the ensuing leaves are broadly oval, woolly-grey, deeply scalloped or dentate. So now the track became a dry river bed (passing near a high water-shoot, where a Knuthiana Primula nestled in damp sods near the spray), and came down again at last into the arid lower levels, where Asphodeline most unwelcomely reappeared as the harbinger of drought and thirst. *Reginald Farrer.*

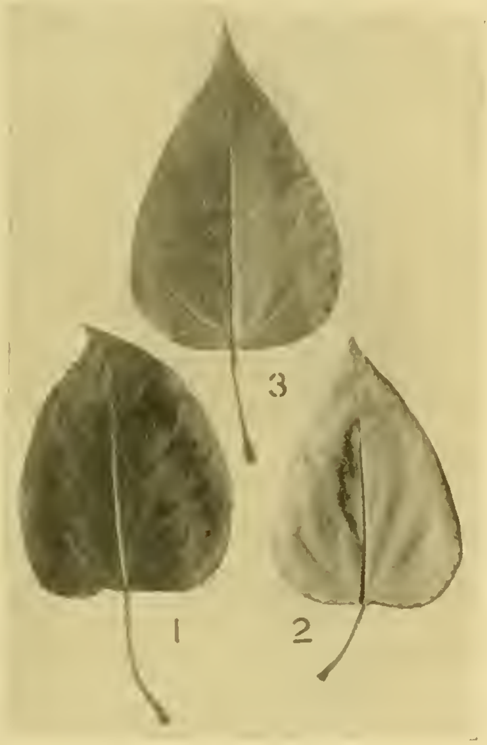


Fig. 103.—(1) POPULUS ANGULATA, AND (2) P. TRICHOCARPA, PARENTS OF THE NEW HYBRID POPLAR, P. GENEROSA (3).

THE SPRING-SUMMER-AUTUMN TREATMENT OF FRUIT TREES.

(*Concluded from p.* 246.)

With regard to the position of the cut, if merely a wood shoot without any basal fruit-bud it is cut back just above the crown of basal leaflets. This, in the book, is called "sur empattement," and leaves about a centimetre length, the intention being to awaken the stipulary eyes. As the term "sur empâtement" has been also used for the old "taille à l'écu" (leaving only the thickness of a crown-piece, otherwise "rabattre"), it would be better to abandon it altogether. Great care must be taken not to injure the leaflets ("folioles") which themselves have as yet no eyes apparent, and consequently the knife must not be used. All cutting is done with the sécateurs, and the old abracadabra of a proper angle goes to the winds—cut just straight across. If a young fruit-bud is present at the base a sap drawer ("appel sève") must be left, and the cut is made above one good apparent eye; if the bud has already 6 to 8, or more, leaflets and is "safe," three good eyes may be conserved, and in July or August as the terminal shoots develop it is taken further back, so that only one remains to be cut away when the September pruning is done. This, I may note, is practically very near to the system I had evolved on larger, older branchlets to get them back near main stems in some of my trees, and to cause latent buds on bare wood to break. When proceeding to establish the system on an old otherwise treated tree, M. Lorette tells me that care should be taken not to cut back branches shorter than about 4 inches from main stems. In these cases the conversion of method begins in May (top) and June (lower branches): but I fancy some regulation in previous September may be useful.

That old bugbear from the horizontal branch, the upward greedy wood-shoot (gourmand), which by old advice was cut back flush (à l'écu), has no terrors on Lorette's system; where with old methods one would have a bare fruitless wound, one saw a nice little pair of fruit-buds.

For trees in the garden there is no great difficulty about following this method of spring-to-autumn pruning, but large growers tell me that they cannot afford labour during these months. However, looking at the yards and yards of bare branches, sometimes terminating besom-like, which are to be seen in large plantations (excellent examples of which may be seen at the National Fruit and Cider Institute at Long Ashton), one cannot avoid the thought that a greater amount of fruit might be obtained from fewer trees whose branches were less given up to baredom and much more to a thorough furnishing with fruit spurs. In one plantation I visited in France a youth of about 17 does all the pruning ("old" method) and pinching of some two thousand Pear trees—these, however, not allowed to grow as they please. M. Lorette told me that it takes about a quarter of an hour to prune one of his winged pyramids, which are 12 to 14 feet high and need the use of steps; the yield of such a tree is about a thousand (250 per main branch) when thinned to produce good-sized fruit.

The different modes in vogue may now be contrasted:—

(i) Lorette's method, or spring-to-autumn pruning, consists in cutting away shoots according to their development during the growing season with the view of utilising stipulary growths and directing sap into the fruiting organs or their preliminary buds.

(ii.) General Continental methods consist in winter pruning to three eyes (système trigemme) and pinching shoots in the green when some 10 inches long to 4 to 6 leaves, and again the new shoot, similar in length, to one, or by some authors to two leaves.

Here the sap movement is also utilised to guide it whither it is needed.

(iii.) General English method consists in winter pruning to two or three eyes, possibly supplemented by summer pruning to four eyes or so in late July or August, when the sap flow has begun to slacken and but little directive influence can be brought to bear; moreover, the treatment would appear to be indiscriminate of the size or vigour of the shoot. Another supplementary process is the barbarous root-pruning, which I believe merely shows neglect of summer treatment. In summer treatment the roots come under control as well as the aerial branches. Lastly, if the results reported from Woburn are acceptable, what is there called "summer pruning" did not appear to have profitable results, and apparently the method was "English," though not particularly specified. One's impression is that the French grower can mould his trees as if they were of wax; M. Lorette goes one better and can place a fruit-bud where he wishes.

Lorette's system can hardly be described as "new"; his oldest trained trees are 18 years of age, and for the last ten years have been treated on his principles. Moreover, evidence is already to hand that his results are not a fortuitous result of local soil and climatic conditions, for satisfactory reports come from the Côte d'Or, Reims and other parts; perhaps I might add Hereford, so far as can be seen by the trees at present being treated. M. Lorette informed me that Apple, Pear and Quince are amenable to these methods.

Peach and Allies.

In Peach and allied trees the summer pinching is suppressed, and replaced by partial defoliation on the basal 50 centimetres or so of the new shoots. The leaves are snipped so as to leave half or two-thirds, according to the vigour of the shoot, which may also be bent down or up. He claims that the production of "Boutons de Mai" is favoured, and his demonstration trees comparing the two methods were convincing.

Gooseberries and Allies.

Here the chief point to note is early pruning as soon as the crop has ripened, so that the basal buds may be well nourished. His hedge of two-branched trees, arranged lozenge way, were more than abundantly hung with fruit, which could be picked without fear of thorns.

It may be said that I went to M. Lorette prejudiced in favour of his methods and remain so. Would that I could now write to bid those whose prejudices are the contrary to go to Wagnonville and see; but the cultured German has swept through Douai, and who knows what has become of M. Lorette or his garden?

Forms for Apple Trees, etc.

For the spalier or counterspalier there is but one form which he recommends—the double U.* Here he is in accord with growers in other parts whom I have visited. The only point to be noted is that the main branches are obtained from stipulary eyes. Perhaps one of the most striking features in the plantation is some young trees showing paired branches practically on a level. These branches were to go and yield place to branches from the stipulary eyes which had been brought forth at a lower level.

For growth in the open the elect prescribe two forms,† the "Distaff" (Fuseau or chandelle) and the Winged Pyramid (Pyramide ailée). The former is especially recommended for small gardens. It is a sort of glorified cordon, and trees of about 4 feet in height have each a capacity of 100 fruit. It requires no artificial supports, and is finished at 5 or 6 years when grown 6 feet 6 inches high. It takes little room, is easily got at for pruning, and casts no shade.

The latter—the Pyramide ailéc—is Lorette's most loved form. The fruit is borne practically directly on the main stems, and is exempt from wind injury. It is highly productive, and easy to get at. If I may criticise, on the assumption that all parts of a tree should be accessible without the use of steps (of course, I except the spalier where the wall is high enough), I think that the height of 12 or 14 feet is too great. In starting an example two years ago, I limited myself to 7 feet and have five main branches in place of four; this I think should be a more practical form. The "winged pyramid" lends itself well to double grafting, and there were several specimens which had a central body of Apple put on the Pear. But it is in the light of the need for near-placed fertilising sorts that I imagine that useful super-grafting could be made by introducing a good pollinator for the insignificant central body; thus the main branches could be Cox's Orange Pippin, whilst the centre consisted of the (to a gourmet) absolutely useless Worcester Pearmain. As the central body is derived from stipulary eyes it is well under control. I had hoped to pay M. Lorette another visit this September, and I shall still look forward to the time when I may be able to get more information from my courteous friend. Here may I wish him safety and health! *Herbert E. Durham, Sc.D., M.B., F.R.C.S., President of the Herefordshire Association of Fruit Growers and Horticulturists.*

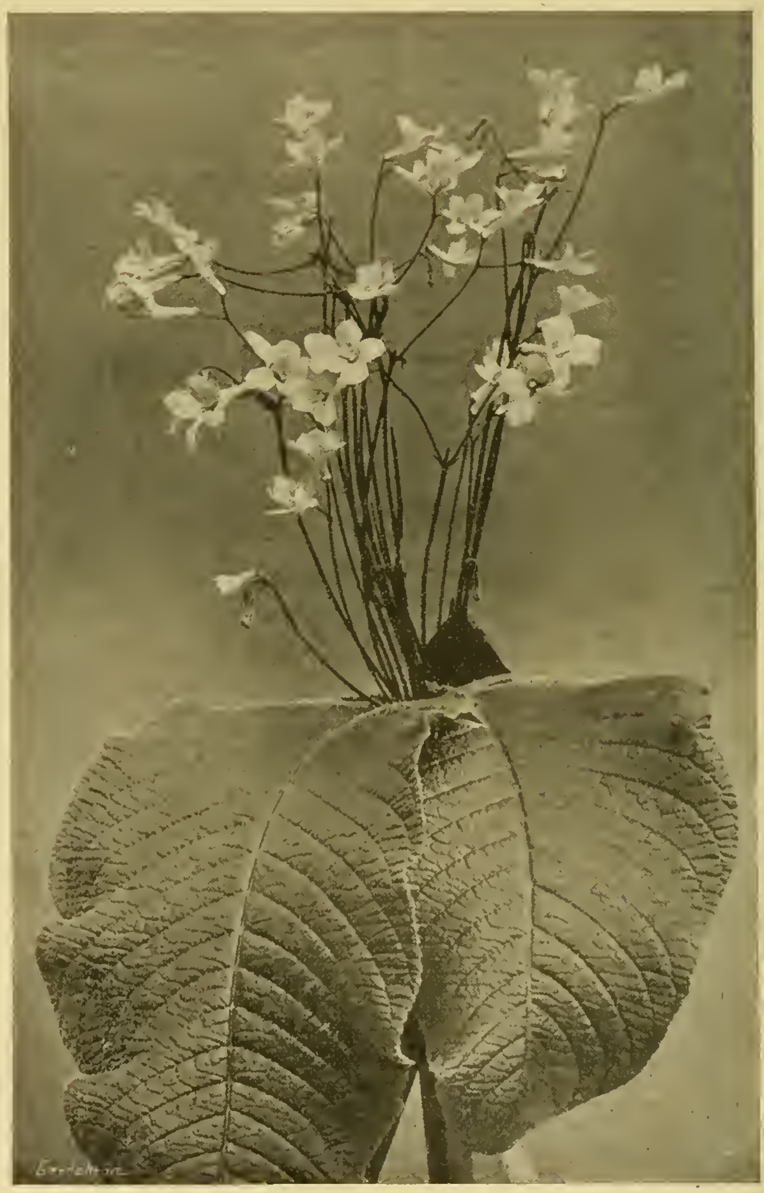


Fig. 104.—Streptocarpus Blythinii (S. Wendlandii × S. cyaneus): flowers bluish-purple.
(See p. 258.)

The Week's Work.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Rhubarb.—The foliage of Rhubarb decayed very early this year, and many of the stools are ripened already. A few roots may be dug up, left on the ground for a few days, and then transferred to a suitable structure to be forced into growth. A high temperature is of no avail in inducing the production of new leaves, it being an accepted fact that slow forcing alone is suitable to Rhubarb. If the roots are large, and much soil is attached to them, nothing further in the shape of soil need be added. I find the growth of large crowns to be quite satisfactory when the roots are merely kept moist constantly. Small roots, on the contrary, should be embedded in some light material, such as leaf-mould, and this kept moist.

Celery.—The main batch of plants should be partially earthed up, the final earthing being left until November. All adventitious growths and small outside leaves may be removed, and the main leaves tied together with strands of matting such as are furnished by the loose ends of Archangel mats. The ties are not knotted, but the ends turned in twice and drawn moderately tight. This is sufficient to enable the soil to be placed about the plants without any reaching their hearts, and any pressure caused by growth in the next few weeks will be relieved by the giving of the strands of matting. French Beans, Cauliflowers, or any other crop that has been growing on the ridges should be cleared off and the soil pulverised as finely as possible before it is gently introduced amongst the plants. A very old plan is to have two boards to place between the two sets of plants while the operator introduces the soil. But I do not find this expedient necessary, provided the stems are carefully drawn together as just advised. In light soil at least the soil should be fairly well firmed, which makes it less retentive of moisture, and consequently less cold during winter. Compress the sides firmly as the work proceeds, to keep the ridges in position during heavy rains. In lifting Celery for use I find it much the best plan to begin at one end of a trench, clear all the soil away, and put it in a heap to use at the end of the adjacent trench for filling. The plants are thus left bare and easy to remove, while the ground is left flat and tidy. Enough to meet the requirements for a week should be lifted at one time and stored in a shed. The space left at the end of the first trench after removal of all the heads is filled up by soil made by opening the one next to it, and so on. My system is to grow Celery two years on the same ground, the hollow left between the trenches being left to form those for the second year.

---

* Some details by different authors on commercial growing and training of fruit trees (especially the Double U) in France and Germany will be found in the *Year Book* of the Herefordshire Association of Fruit Growers and Horticulturists, 1913. In this region I only know of one enterprising grower who has installed a plantation of trained trees for commercial purposes; unfortunately, these are all single cordons. and, still more unfortunately perhaps, he has made them oblique; thus they are planted too closely, tend to get in each other's way, and require more attention than the U or double U.

† I only mention here the Vase ("Gobelet"), as more of an exercise in training than as a practical form. The "Gobelet cubique," too, requires more elaborate supports, though a good open form.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Pleione.—The early-flowering Pleiones, such as P. laginaria and P. maculata, may be expected to flower shortly, and the roots should be watered sparingly until the spikes appear, for much moisture would favour growth at the expense of flowering. Place the plants near to the roof-glass in the Cattleya or intermediate house, but when the flowers have expanded transfer them to a cooler and drier house, in which the flowers will remain perfect for a long time. The work of re-potting is best done immediately the flowers are over, using a compost consisting of equal parts chopped Sphagnum-moss, peat, turfy loam and broken leaves, with plenty of sand, and broken crocks intermixed. The layer of compost need only be about two inches in depth, and the materials should be made moderately firm. Use plenty of drainage material. The pans should be suspended near to the roof glass, and, as the compost dries, it must be watered, although only a little moisture is necessary at the start.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Planting.—Although fruit trees may be re-planted just before the fall of the leaf and the operation continue until the rising of the sap in spring, yet autumn planting is much to be preferred. If the borders have been prepared as directed in a former calendar, the trees may be planted at the latter end of October or the beginning of November. These dates are unquestionably the best times for planting, as the trees will have time to make fresh roots before the winter and thus become partially established before spring. Mark the exact site of each tree, measure the correct distance from plant to plant, and then make the hole for the roots. Lay the roots out, as many as possible, in a horizontal direction, and in the case of trees grown in pots this detail is the more important. Care must be taken that the trees are not planted too deeply; the uppermost roots should not be more than four or five inches below the surface. Having pruned and prepared the roots as directed in the calendar for September 25, place the tree in the hole, with the budded or grafted part facing the border, allowing the head of the tree to incline somewhat towards the trellis or wall. Disentangle the roots and spread them out. Do not allow any roots to grow in the direction of the wall, for if they reached the brickwork growth would form an angle, causing injury that in the case of stone fruits would set up gumming. When the roots are spread out properly, place three or four inches of good soil over them, and over this about two inches of well-decayed cow manure, or half-rotted stable dung. The soil may then be pressed down gently by the foot, always beginning at the extremity of the roots, so that the ends may be kept in their proper positions. The surrounding soil may then be levelled or raised slightly, to allow for the trees settling. After this has been done soak the border with clear, soft water, which will help to settle the soil. This is far better than shaking the tree at the time of planting, which is generally done, in order to allow the soil to settle amongst the roots. The ill effect of this practice is that in raising the tree in the process of shaking it, the roots are drawn out of their correct position. and, the soil being light about them, immediately closes up the spaces from which the ends of the roots were drawn. Thus, when the tree is pressed down again, the roots cannot force themselves forward into the spaces they previously occupied, and are bent backwards. The watering of the roots at this stage also affords support to the tree. Secure the main branches or stem to the wires or trellis temporarily, until the trees are pruned and trained.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Late Plums.—The remainder of the crop of late dessert Plums, such as Coe's Golden Drop, should be picked and laid thinly on shelves, or in drawers in the fruit-room. They will keep a week or two longer in good condition if the skin is not bruised. It is a good plan to wrap the individual fruits in tissue paper; each fruit should be perfectly dry, and the room kept cool and well ventilated.

Ordering Fruit Trees.—A visit to a good fruit tree nursery to select specimens of the required shapes and sizes is advisable before proceeding to plant. The conditions of the ground about to be planted should be borne in mind, and trees selected to suit the positions available, whether the trees are required for walls, the open garden, or the orchard. If such a visit is not possible, the selection can, if necessary, be left in the hands of the nurseryman, who will advise as to the best varieties and styles. In any case the order should be placed as soon as possible, and the ground prepared, so that the trees may be planted without delay, provided the weather is favourable. Trees planted early, while the ground retains some of its summer heat, will recommence root action at once, and will soon become established. They will thus be in the better position for withstanding extremes of weather. Apart from the trees trained on walls and espaliers, the dwarf open bush is the form of tree to be recommended for planting in the average garden. Trees grown in this style may be planted fairly closely together, and can be attended to from the ground for many years. Even when fully grown, a pair of strong steps is all that is required, when pruning or gathering the fruit. The evil of planting standard trees in a small garden is not apparent for a few years, but as the trees develop they shade the ground, and unduly restrict the space for other crops.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Coleus thyrsoideus.—Grow the plants in an intermediate temperature, feed them with discretion, and treat them generally so that they will make short-jointed growths and shapely specimens. As the flower-spikes appear raise the temperature of the house. The inflorescences when cut are very effective for room decoration. The plants in bloom may be grouped at the warmer end of the conservatory and flanked by flowers of other colours that blend.

Mignonette.—Plants in 6-inch pots intended for winter flowering may be removed from frames to a light shelf or staging in a greenhouse, where they will flower. Place three stakes around each plant, and enclose the shoots with bands of raffia, twined round the stakes. Pick off dead leaves, and stir the surface soil. As a stimulant, add ¼ oz. of ammonia in each gallon of water, apply the liquid to the roots, and take care not to wet the stems or foliage. Later batches may be placed on a shelf, where they will get fresh air and be free from danger of frost.

Campanula medium (Canterbury Bell).—Lift the plants from the open border with plenty of soil on the roots and pot them in 7 and 8-inch pots. Water once and then plunge the pots in a bed of ashes made in some convenient place, where lights and protecting material can be placed over the plants during frost. Growth will continue throughout the winter, and in spring the roots may be fed frequently with soot and manure water. The plants should be grown in a light, airy position, near the roof-glass.

Imantophyllum (Clivia).—These plants are now rested sufficiently and the leaves may be sponged, the roots top-dressed, the pots washed and the collection placed in a cool greenhouse. I introduce batches into heat for forcing as required.

Richardia Elliotiana.—The roots may be stood under the greenhouse staging for the present in a temperature of 55°.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Rose Gardens.—Alterations of beds, the replacing of worn-out plants, or the planting of newer and better varieties, should be put in hand forthwith. Fresh soil will be required, and under the top foot a good layer of well-decayed animal manure. There are now so many good leathery-foliaged Roses, most of which bloom profusely into the late autumn, that it is advisable to avoid all Roses with flimsy foliage, these being susceptible to mildew. Ecarlate, Richmond, and General McArthur are reliable and satisfactory amongst the red Hybrid Teas. For garden effect and for cutting purposes, the Polyantha section is extremely useful; Mrs. Cutbush, Jessie, Orléans, Perle d'Or, and several others are masses of bloom all the season.

Flowering Shrubs.—The transplanting and thinning of flowering shrubs should receive attention directly the soil is sufficiently moist. If planting is completed sufficiently early, the removal is hardly felt by the shrub, nor is the after-growth affected. It is necessary in all shrubberies to provide more room from time to time for choice varieties, in order to avoid injury to the symmetry of well-furnished shrubs. Bamboos may now be divided; in replanting do not omit to put a good layer of animal manure under the top spit of soil.

"Everlasting" Flowers.—The flowers of Helichrysum should be cut on a dry day, bunched in small quantities and suspended in a dry, cool shed. The blooms will supplement the winter supply of flowers from the glasshouses. They may be arranged in vases without touching the water, in which Rosemary, Lavender, or other evergreens are placed for decorations. A few of the brighter everlastings loosely arranged with plenty of evergreens make an attractive vase in winter.

Publications Received.—*The Journal of Agricultural Science,* Vol. VI., Part 3. September, 1914. (London: Cambridge University Press.) Price 5s.—*Zoological Philosophy: an Exposition with Regard to the Natural History of Animals.* By J. B. Lamark. Translated, with an introduction, by Hugh Elliot. (Macmillan and Co., Ltd., London.) Price 15s. net.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, **Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 48.6°.

ACTUAL TEMPERATURES :—

LONDON, *Wednesday*, October 14 (6 p.m.): 53°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, October 15 (10 a.m.): Bar. 29.6; Temp. 56°. Weather—Raining.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—

Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, at 11 a.m.

TUESDAY, WEDNESDAY AND THURSDAY—

Twenty-second annual sale of Nursery Stock, at Milford Nurseries, near Godalming, by order of Messrs. Maurice Young and Son, by Protheroe and Morris, at 12.30.

WEDNESDAY—

Trade sale of Liliums and other Bulbs, Palms and Plants, by Protheroe and Morris, at 3.

MONDAY AND WEDNESDAY—

Dutch Bulbs, Rose Trees, Shrubs, Azaleas, etc., at Stevens' Rooms, King Street, Covent Garden.

Land Reclamation and Unemployment.

It requires no subtlety of observation to discover that since the outbreak of war a new spirit has come over the people of this country. They are less prone to controversy and more prepared to act. It behoves the governing and administrative classes to take advantage of this chastened national spirit. They have but to lead to obtain a strong and determined following. They must lead if the new and nobler patriotism which is abroad among us is to be turned to the fullness of its potential purpose. This is not the place to pursue these reflections to their most important conclusions, but it is the place in which to point out certain modes of leadership which are much to be desired. Of these modes we will confine ourselves to those which are concerned with the problem of unemployment. It is certain that there will be serious unemployment, and, doubtless, the proper authority has, by this time, ascertained whether it will or will not be possible to utilise the unemployed locally in the improvement of roads and other public works. If such an enquiry has been made it has doubtless been discovered that in many cases local public work cannot be discovered in sufficient volume to find employment for all. We would ask how is it proposed to cope with the large amount of distress which must prevail if remunerative local work cannot be found for those whose normal trades are at a standstill! The time has come when it is imperative to ask this question. Two alternative solutions have doubtless been considered. One, a wide and generous system of relief; the other the provision of State employment. The former is the worst of all possible solutions. It impoverisheth him that gives and him that takes. Yet it must, of course, and will be, practised. The second solution, the provision of work for State improvements, offers enormous difficulties, yet in the present emergency, these difficulties must be met. To find an unlimited field for national improvements is easy. We need only point to the profoundly interesting address by Mr. A. D. Hall, which we summarise in another column, to show that land reclamation on a great scale is both possible and profitable. Mr. Hall demonstrates that by applying the methods indicated by agricultural science the sandy heath land of this country may be brought under profitable cultivation. Of such land there are countless acres.

The difficulties of bringing urban labour to bear on the land are so patent that we need not enumerate them: the less so in that the business of our leaders is to overcome them. We may suppose that in the long interval between the outbreak of war and the approaching winter these difficulties have been considered and met. The fact that the labour likely to be available is by no means adapted for hard and specialised manual work, has doubtless been considered and brushed aside. For, on the one hand, stand want and relief, on the other, employment and wages. We should assume, therefore, that just as "hutments" are being raised for the recruits of our armies, so are they being erected in suitable places for the housing of able-bodied men with their families, who will be willing for a time to leave the blank unemployment of the town for work in the country. It may be assumed that not many town-dwelling workers at special trades would be willing to adventure on such a temporary exodus to the country. But our leaders will doubtless have obtained in advance a refutation to that objection. They will have established a canvass in the centres in which unemployment looms and have doubtless already long lists of the men who are willing to turn their hands to this form of work. The sites of the reclamation areas have doubtless been chosen, men to act as foremen selected, and all, as we may hope, is prepared for this attempt to conquer for cultivation some of the waste land of the country. If all is ready, then when winter overtakes us and harries our towns with want, the country will embark on this experiment with some chance of bringing it to a successful issue and with the certainty that some thousands of men are preserved from the demoralisation attendant upon enforced and prolonged idleness. If, instead of preparations such as we have indicated, our usual practice has been followed, and things have been allowed to drift with the aspiration that relief work can be improvised, we shall have been courting chaos and failure. For our part we refuse to believe that no preparation is being made for large scale land-reclamation work, and we appeal to the authorities to give an account of their stewardship by putting us in possession of the extent and scope of their perfected plans. The War Office has shown how the gigantic problem of accommodating vast bodies of recruits may be solved, the proper State Departments should be prepared to carry out—if the need arise—an equally great mobilisation of the armies of labour.

R.H.S. Special Show of Fruit.—We have received the following note from the Rev. W. WILKS, secretary of the Royal Horticultural Society :—"It was with very great regret that the Council was compelled to abandon the British-Grown Fruit Show, fixed for September 29, but the military were then in occupation of the hall, and no other suitable hall could be discovered which was not similarly occupied. The Council has now received an assurance that their hall will not be further taken over except it might be under pressure of some altogether unexpected and grave crisis in affairs, so that we may now with a fair amount of confidence resume our regular meetings and shows. It is now too late to attempt to re-organise the whole of the fruit show according to the published schedule, but under the peculiar circumstances the Council thinks it a good opportunity to draw attention to the more definitely late-keeping varieties of British hardy fruit. They therefore specially invite exhibits of such, both as collections and as single dishes, on Tuesday, December 1. No schedule will be issued, but the Council will make such awards as they think fit. They are very anxious to utilise this opportunity of laying stress on the really and naturally late-keeping varieties, and consequently will not look with favour on earlier varieties, either artificially or with great and exceptional care kept back out of season."

Agricultural Education Conference.—The Rural Education Conference, which was constituted by the Board of Agriculture and Fisheries and the Board of Education in June, 1910, was appointed for a term of three years. This period having expired. the Conference has been re-constituted by the Board of Agriculture and Fisheries under the name of the Agricultural Education Conference. The duty of the Conference will be to discuss, and to advise the Board upon, all questions connected with agricultural education which fall within the province of the Board of Agriculture and Fisheries, and specific questions will, from time to time, be referred by the Board to the Conference for consideration. In addition, any member may suggest for discussion questions other than those formally referred to the Conference. The LORD BARNARD has been appointed Chairman of the Conference and Mr. H. L. FRENCH (Board of Agriculture and Fisheries, Whitehall Place, S.W.) will act as its Secretary.

The British Association in Australia—The reception of the members of the British Association by Australia was both brilliant and cordial. Among the numerous social and academic functions were a reception by the Governor-General at Government House, and a graduation ceremony at which the degree of D.Sc. was conferred on the President, Mr. W. Bateson, Prof. H. E. Armstrong, and other distinguished visitors. The members of the scientific societies of Victoria entertained members of the Association in the Botanic Gardens, and the occasion was celebrated by the planting of Cupressus macrocarpa in commemoration of the visit. The planting was duly carried out by Mr. Bateson, acting in his dual capacity of President of the Association and head of a great horticultural institution. The choice of subject was singularly happy, for Cupressus macrocarpa, "a hardy tree of great beauty and of extremely rapid growth," shall serve as a symbol of Australian science. Botanical excursions were made to Warburton and Cement Creek, where the giant Eucalyptus were once so numerous, and also to the mountain forest region, where Prof. A. J. Ewart showed the visitors the fruit-tree nurseries and the experimental oil-farm. Another excursion was made to the National Park at Wilson's Promontory, a nature reserve consisting of 150 miles of mountainous country.

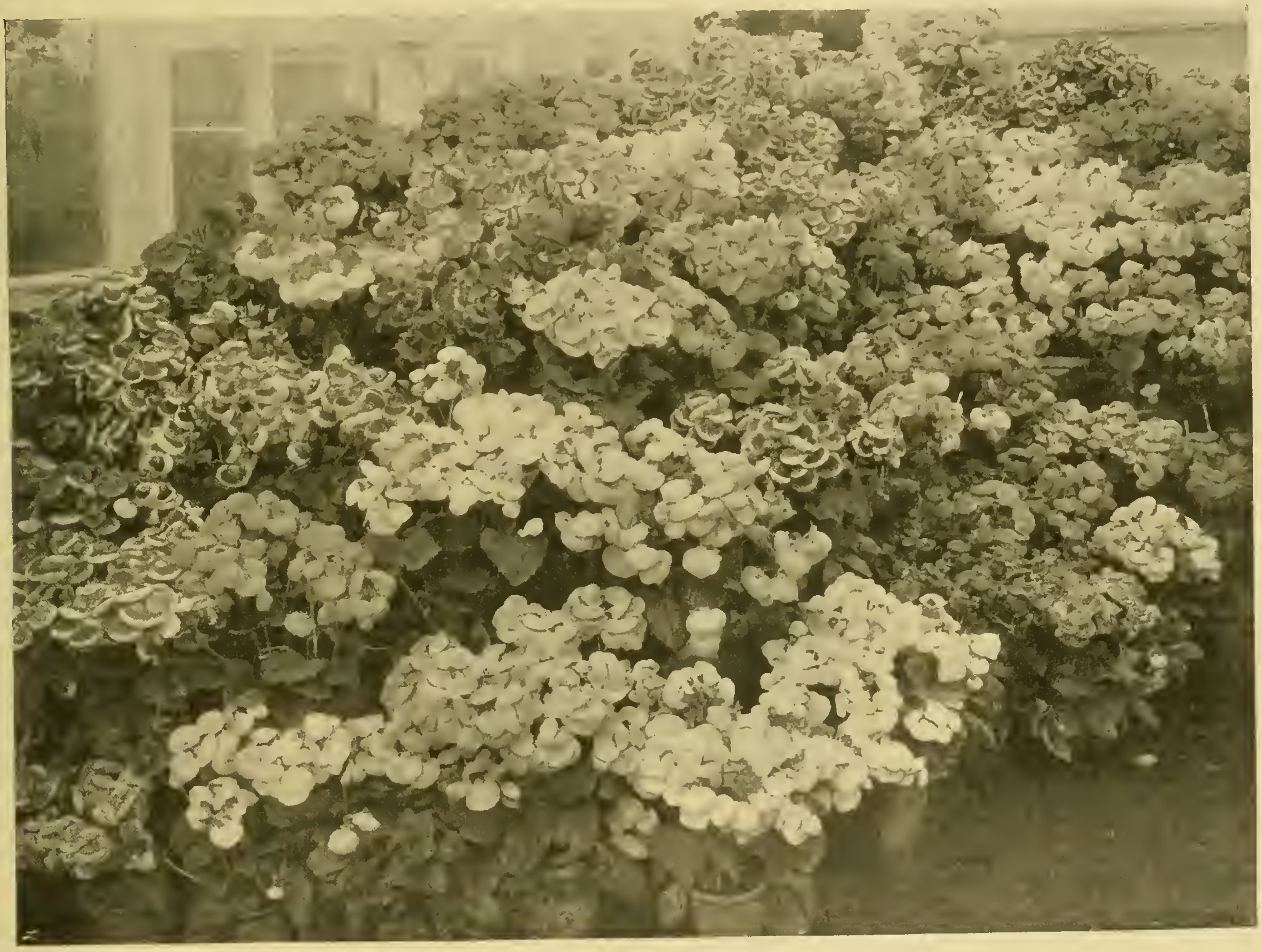


Fig. 105.—calceolarias as grown at chipstead place, sevenoaks.
(See p. 264.)

Strawberries in India.—In the days when Mr. Nock was Curator of the Hakgala Gardens, near Nurwara Eliya, in Ceylon, we have eaten Strawberries grown in those gardens. They were prized more for the associations which they evoked than for intrinsic merit. Yet it is said by Mr. W. Burns (*Official Agric. Journal of India*, IX., part 3) that in the chief hill station in the Bombay Presidency a flourishing Strawberry industry exists. Somewhere about 1830 Chinese and Malay convicts confined in the jail at Mahableshwar—the hill station in question—requited the kindly surveillance of their guardians by introducing the cultivation of the Strawberry—now become a flourishing industry.

The Shortage of Potash Manures.—In view of the shortage of potash manures, due to the cessation of German exports, it is well for the gardener to remember that one of the beneficial effects of nitrate of soda is that it brings the potash in the soil into solution, and thus renders it available to the growing plant. This property is not possessed by the other chief soluble nitrogenous manure — sulphate of ammonia. Other substances which liberate a certain amount of potash in the soil are lime and gypsum. The latter substance has the further property of "fixing" ammonia: hence its use in a finely-ground state for dusting in stalls and byres and over manure heaps. A note by Mr. Frank T. Shutt in the *Report of the Experimental Farms, Ottawa*, 1914, is worth attention as indicating a minor source of potash for use in the neighbourhood of great manufacturing towns. It appears that the oxygen-acetylene plant used for welding and other high-temperature operations gives a residue which is rich in potash. The residue is derived from the oxygen-manufacturing process in which potassium chlorate and manganese dioxide are used for the generation of oxygen. The residue contains about 70 per cent. of potassium chloride, and hence should have considerable manurial value.

The American Apple Crop.—The Apple crop in the Montana, Idaho, Washington, Oregon, and California districts, according to the United States Department of Agriculture, is estimated at 18,600,000 bushels, but the U.S.A. Fruit Exchange and papers claim that the production will not exceed 10,700,000 bushels. The prices are very low compared with last year, Jonathan Apples being bought from the grower at 3s. 1d. per bushel, whilst last year the same two first grades were worth 5s. 2d. per bushel.

Cashew Nuts.—The following note from the *Trinidad and Tobago Bulletin* (March-April) will be of interest to our readers in tropical countries:—The Department of Agriculture has received an enquiry from a firm in Paris which wishes to obtain cashew nuts on the terms indicated in the following extract. The Director of Agriculture will supply the name of the firm to anyone who may wish to enter into correspondence on the subject:—"For your guidance we beg to inform you that we generally pay for these kernels about 40s. per cwt. nett weight, cases free, goods put up in 2 cwt. cases. This refers to the slightly roasted kernels in order to free them from their hard shell and only the fine thin brown dusk adhering to the kernels. We buy annually about 100 tons, and would be extremely pleased if you would kindly put us in contact with one or several serious firms in whose shipments we may have entire faith, as we are disposed to order this stuff, payment against shipping documents. Please note that the above-named price is to be understood c.i.f. Havre, shipment by steamer not touching a European port before coming to France in order to permit us to enter the goods without special duty obtained from all Colonial goods imported into France via any European country."

ISLANDS OF VEGETATION.—In Yamagata, Japan, is a small lake called the Lake of the Floating Islands, discovered about the year 1340, which has from that time attracted the attention of many poets and literary men. The mysterious movements of these islands are the subject of a note in *Nature* (October 8, 1914), based on a report drawn up by a party under Prof. S. KOSAKABE, which is published in the *Science Reports of the Tohoku Imperial University* (Sendai), iii. 2. The floating islands, which at times number no fewer than sixty, are found to be continually changing their position, moving first one way and then the other. In the first series of observations, wooden floats were placed in the lake showing the distribution of the various currents; subsequently a model of the lake was constructed, and it was found possible closely to reproduce the various movements of the surface. When both water and wind currents were taken into account, the actual behaviour of the islands was found to be quite in accordance with theory and experiment. The islands originate from masses of vegetable débris, which are first carried to the surface by bubbles of gas; seeds contained in the mass germinate and add to its extent. Sometimes the mass becomes top-heavy and overturns, and growth proceeds on the other side, until the island becomes large and stable.

WEST INDIAN LIME JUICE AND ORANGE OIL.—Referring to the present demand in English commerce for good West Indian Lime juice, *The Chemist and Druggist* states:—"Sir HESKETH BELL, Governor of the Leeward Islands, who has arrived in this country on leave, stated, in course of an interview, that the planters in Dominica are doing remarkably well. The price of Lime juice has risen to such a figure that very large profits are being made out of the cultivation of Citrus fruits, and land is rapidly rising in value. There is still a large area of good Crown land available for settlement, and Dominica continues to be one of the most promising Colonies to which a young man with moderate capital may seek his fortune." Quoting still from *The Chemist and Druggist*, which acknowledges its source of information as the *Journal of the Jamaica Agricultural Society*, we find much interesting information regarding West Indian Orange oil. From this it seems, up to the time of the Messina earthquake, when large stocks of it were destroyed, there was practically no sale for West Indian Orange oil in London, the Sicilian brands entirely holding the market. An impetus was thus given to the Jamaica growers to meet the demand at the higher prices that were offered. The Jamaica industry, it is stated, suffers from lack of centralisation, the Oranges being spread over pastures and hillsides, whereas in Sicily they are grown chiefly in groves, and are rinded in central factories. The Jamaica peasants are sent out with hand machines and bottles to collect and rind the fruit under the trees, the bottles containing, after rinding the fruit, a mixture of oil, mucilage and juice. After "settling" the oil is decanted, clarified, packed in copper drums and shipped to London. The bulk of the oil produced is handled by two firms of London merchants, who act as agents for the producers. It is mostly sold by private contract according to brand, and, as the demand is limited, great care is necessary not to overstock the market. For the past two years the prices paid by producers to the owners of fruit, together with the wage paid to the person rinding the fruit, have been higher than the normal selling price in London. The writer of the article hopes that the business will be left alone in the hands of those who have by experience learnt the ins and outs of Orange oil. It will, he says, be an unfortunate day for Orange-growers if the collection and shipment gets into a multitude of hands with the usual fighting among producers and bidding up of prices in Jamaica in the hope of shipping large quantities of oil.

THE NATIONAL ROSE SOCIETY: RESIGNATION OF MR. EDWARD MAWLEY.—At the last meeting of the council of the N.R.S. Mr. EDWARD MAWLEY announced his intention of resigning the secretaryship of the society at the close of the current year. Thirty-seven years ago, when Mr. MAWLEY was appointed co-secretary with the late Rev. H. H. D'OMBRAIN, the society was almost in a bankrupt condition. Owing mainly to his untiring energy and the kindly feeling he has fostered among its members, the society has grown in a wonderful manner, so that now it has a membership of some 6,000 and a reserve fund approaching £3,000. The president (Mr. C. E. SHEA) referred to Mr. MAWLEY's resignation as a catastrophe, and he could not well have used too strong a phrase to express the loss which will be suffered by the society, for it is scarcely likely that another can be found to carry on Mr. MAWLEY's work possessing both the leisure and capacity which he has devoted to the society, together with the resource and singleness of purpose he has displayed. That this feeling pervaded the Council may be gathered from the fact that they proceeded at once to appoint a committee to consider what re-organisation of the society will be desirable. It was understood that Mr. MAWLEY will be proposed as president of the society for the ensuing year.

MR. EDWARD MAWLEY, V.M.H.,
Hon. Secretary of the National Rose Society.

ANGLO-AMERICAN EXPOSITION AWARDS.—The special jury of the Anglo-American Exposition has awarded a Diploma for Gold Medal to "Abol" non-poisonous insecticide.

ORCHID SALES.—On the 9th inst. Messrs. PROTHEROE AND MORRIS held their first sale of Orchids for the winter season at their Central Sale Rooms. The catalogue included a good selection of showy species of Orchids from Messrs. SANDER AND SONS, and hybrids from the St. Albans and other firms. There was a good attendance of Orchidists, and although prices ruled low a fair amount of business was done. The great attraction of these sales is the fine and varied show of Orchids in bloom, both hybrids and species. On this occasion there was a good display of Cattleyas, Laelio-Cattleyas and Odontoglossums, but the most effective plants were some finely-flowered specimens of the old Odontoglossum grande.

CHRYSANTHEMUM SHOW ABANDONED.—Brighton, Hove and Sussex Horticultural Society's Chrysanthemum Show, arranged for November 3 and 4, also the lectures fixed for October 15 and November 19, have been abandoned.

WAR ITEMS.—The sum of £241 in aid of the local Belgian Relief Fund has been realised at Hull by the sale by auction of eleven Pears. The first fruit was purchased for ten guineas by a fruit merchant, who also gave £20 for the auctioneer's hammer.

—— At Smithfield Market, Manchester, a fruit of Lord Derby Apple weighing 21½ ounces was sold in aid of the War Relief Fund, and realised £25.

—— Mr. ARTHUR W. SUTTON, head of the firm of Messrs. SUTTON AND SONS, has presented to the Reading Junior Young Men's Christian Association a fully equipped rifle range.

—— On Wednesday, the 7th inst., Messrs. EDWARD JACOBS AND SONS, Floral Hall, Covent Garden, W.C., held an auction on behalf of the *Daily Express* Shilling League. The total amount realised was £310 18s. 6d., which was handed over free of costs. Lot 16 was a fruit of Apple Peasgood's Nonesuch, weighing 1 lb. 15 oz., which was sent by Colonel HONEYBALL, and bought by Messrs. ADAM AND CO. for £55. An entertainment was given previous to the sale.

EXPERIENCES OF AN ANTWERP FLORIST.—Mr. THEO. HESSELS, one of the leading florists of Antwerp, interviewed by a newspaper correspondent during his journey to London, gave the following account of his experiences:—"My wife and I just escaped with our lives. We embarked on a boat for Flushing. As we were getting on board shells filled with paraffin or benzine were bursting all over the boat. From one moment to another we did not know if our last hour had come. I had a fine business, and whenever the King and Queen came to Antwerp I had the great honour of supplying them with flowers. Now, so far as I know, I am penniless. I had £2,000 worth of pictures. These I placed in my cellar. It is awful; it is horrible." As the train was about to start the refugee was bidden to be of good cheer, the journalist remarking, "When the settlement comes the Allies will exact reparation for these crimes"; but Mr. HESSELS replied, "Germany can never give us back what we have lost."

HERBACEOUS CALCEOLARIAS.

IT is said that herbaceous Calceolarias are not used so extensively for greenhouse decoration as formerly. One wonders if this is because of an objection to the plant itself or to its somewhat exacting culture. I do not think it can possibly be due to the former, and I do not like to suggest the latter reason; but no doubt the long season of growth and the great care required during the winter months may in some way be responsible for the fact that we do not see the Calceolaria occupying its position of former favour.

It is of great importance that unfailing attention should be paid to cleanliness in their culture from the first. Insect pests must be kept under, and as prevention is better than cure the house should be fumigated slightly every three or four weeks.

If plenty of air is admitted at all seasons growth will be robust and the plants stocky. During the winter months they should be grown in a light, airy house, furnished with one row of water pipes. They should be stood on a layer of shingle or staging and not crowded. Plenty of ventilation should be admitted both at the side and top of the house. Special attention must be paid to watering, remembering that during the winter the roots are almost inactive, and therefore require very little moisture. But as soon as March arrives the plants need a great deal of water and feeding in some slight degree should be commenced, increasing the amount of food as time goes on until cow manure and soot-water may be applied twice weekly. Attention to details is the one secret of good culture in all plants, but especially is this true of the Calceolaria. The plants (of the Victoria Prize strain) illustrated in fig. 105 were grown by Mr. A. Dumbleton, gardener to John Duveen, Esq., at Chipstead Place, Sevenoaks. The plants were models of good culture, clean, and the large flowers very intense in colouring, the shades ranging from a creamy white to deep crimson and orange. It was one of the finest groups of Calceolarias I have seen. *J. S. D.*

FLORISTS' FLOWERS.

EARLY-FLOWERING CHRYSANTHEMUMS.

Messrs. Dobbie and Co., Edinburgh, furnish us with the following particulars of a trial of Chrysanthemums which they are conducting at Edinburgh:—

In addition to the extensive trial of early-flowering Chrysanthemums which is this year being conducted by the Royal Horticultural Society in their gardens at Wisley, Surrey, a very large trial of the same class of plants is being made in our nurseries at Edinburgh.

In addition to our own stock, we have purchased from various sources all the varieties of early Chrysanthemums on which we could lay hands. Many of the plants were somewhat small when received, and the planting which was made in the early part of May was irregular on this account, but they (two of each variety) made very good growth afterwards and at the time of inspection were in a very creditable condition.

These Chrysanthemums were all planted in batches of each colour, so that when the adjudication was made comparison would be much easier. As was to be expected, the growth of the several varieties was very irregular, ranging from about 1 to 4½ feet in height; the period of blooming, too, was quite as varied as the height of the plants. The first flowers appeared early in August, while the later varieties will not come into bloom until well on in the month of October, and on this account are not suitable for northern cultivation.

It was thought advisable to have the collection inspected about mid-season, and this took place on Tuesday, September 22, the following gentlemen acting on the adjudication committee:—Messrs. W. H. Massie, of Messrs. Dicksons and Co., Edinburgh; John Phillips, Granton Road Nurseries, Edinburgh; John Alexander, The Gardens, Niddrie, Craigmillar; William Galloway, gardener to the Earl of Wemyss, Gosford, Longniddry.

The varieties under trial were as follow:—

Japanese Early Flowering, 190; but of these 62 were not in bloom at the date of inspection.

Pompon varieties, 39; of these 10 were not in bloom at the date of inspection.

Single varieties, 99; of these 9 were not in bloom at the date of inspection.

The following varieties were judged to be the best in their various sections:—

Early Chrysanthemums.

White.—Artemis, Cranford White, Doris Peto, Tuckswood Early, White Countess.
Creamy White.—Cream Perrier, White Masse.
Pale Yellow.—John Bannister.
Deep Yellow.—Carrie, Elstob Yellow, Horace Martin, Leslie, Champ d'Or, Maggie, Miss B. Melville, Orion, Polly.
Blush.—Cynthia, L'Yonne, Normandie.
Rosy Pink.—Lillie, Mdm. C. Periere.
Rosy Lilac.—Improved Masse.
Chestnut Crimson.—Almitante, Mrs. Willis.
Crimson.—Crimson Diana, Crimson Polly, Goacher's Crimson, Kuroki, Mrs. W. Sydenham.
Crimson Scarlet.—Wells Scarlet.
Terra Cotta.—Abercorn Beauty, Orange, S. F. Richmond, Verona.
Bronze.—Bronze Goacher.
Orange Bronze.—Diana, Harrie.

Pompons.

Yellow.—Craigmillar.
Bronze.—Mrs. E. Stacey.
Blush.—Mr. Selby.
Crimson.—Little Bob.

Single Early Varieties.

White.—Marion Bannister, White City.
Yellow.—Ada Nice, Brightness, Joan Carter.
Orange.—Wells Pride.
Bronze.—Eric.
Pink.—John Woolman, Pink Gem.
Purple Rose.—Dorothy.
Crimson.—Dazzler.

THE ROSARY.

GOOD AND BAD WEATHER ROSES.

Rose-growers know that each year the names of certain Roses are on everybody's lips, but not all recognise the cause of this intermittent popularity.

The year 1913 saw the variety Lady Pirrie spring suddenly to the front as the most popular Rose of the year. The present year has seen the popularity of another class of Rose, that of those sorts which possess not only many petals, but flowers which in wet seasons are worthless.

Wet-weather Roses.

Some of the thinner Roses or varieties with few petals are the most beautiful in the unopened stage; these produce long and elegant buds. Naturally they open better in wet weather than those with many petals, and remain in the bud stage during dull or wet weather longer than when the heat or drought causes them to fly open quickly and show the centre of the flower.

To such a category belong some of the most beautiful of the introductions of recent years, and notably Mrs. A. Tate, of which the exquisitely shaped bud and glorious shrimp-pink and salmon old-rose colouring have caused this variety to be one of the most popular of its class. The same remarks apply to Lady Pirrie, except that in colour it is a reddish apricot in the bud state; it is also remarkably free-flowering and a vigorous grower. Mrs. A. R. Waddell, brilliant shrimp-pink and apricot-yellow—a glorified Lyon in colour; the older Betty, the Hon. Ina Bingham and Killarney, Lady Hillingdon, Mme. Mélanie Soupert and Richmond are all in this class; but there are still others which do better in wet weather for the reason that they lack the vigour of growth in a dry season, notably such sorts as Mrs. Grout and its sport Joseph Lowe or Lady Faire, from which one can always cut good flowers in wet weather.

These wet-weather Roses have their uses when, through excessive wet, good flowers of other sorts are impossible to obtain.

Dry-weather Roses.

Among dry-weather Roses are included many of the best varieties. In our own climate, and especially on the Continent, where dry summers are so frequent, they are often the best varieties of the year. Some develop their full colours and best qualities under these conditions, and notably the Pernetiana section, Lyon, Château de Clos, Vougeot, which are only at their best in hot weather. Sunburst, which comes almost white in cold, wet weather, but develops its colour under the influence of the sun; Willowmere, of which the same may be said; A. R. Goodwin; Mrs. K. Vanderbilt, a glorious colour in warm weather; Rayon d'Or, Mrs. Andrew Carnegie (the scented Frau Karl Druschki), from which F. K. Druschki it is a seedling and a fine Rose in hot weather, are amongst many others to be seen at their best under these conditions.

One sometimes hears the old favourite Rose, Dean Hole, abused, but this is in wet weather. In a season like 1914 it is one of our best Roses, and is always reliable in a dry summer; the same may be said of its sport, Duchess of Normandy.

The deterioration of old favourites is another noticeable point about the Rose of to-day. It is not only that the improvement of the newer Roses has put them in odious comparison, but a positive deterioration has set in, as instanced in such sorts as Crimson Rambler, which generally is affected with mildew in these days, and La France, of which one does not meet the fine specimens to-day that were common ten or fifteen years ago. Cannot those who remember some of the old favourites in their heydey say the same of many of the old hybrid perpetuals which once were good but now are no longer seen in their old form?

This deterioration in some of the older Roses is happily not very extensive or marked, but it must have some fundamental reason which is not apparent. *Laurence J. Cook.*

THE MARKET FRUIT GARDEN.

Rain fell at my station on only eight days in September, all of which were in about the middle of the month, beginning on the 9th and ending on the 17th, one of the nine days being rainless. For the six months, April-September, my register is only 7.23in., made up as follows in inches:—April, 1.03; May, 0.67; June, 1.06; July, 2.55; August, 0.68; September, 1.24. The total is only slightly over half the average for the period. The short spell of rainy weather was welcome for allowing land previously too hard to be hoed. Possibly also the moistening of the soil helped to swell late Apples, though this is not strikingly obvious. As to this point, there has been a curious disparity in the apparent effect of drought upon the sizes of different varieties of Apples. In my own case Mr. Gladstone, Early Julyan, Charles Ross, Royal Jubilee, Lord Grosvenor, Worcester Pearmain, Cox's Orange Pippin (except on some unhealthy trees), Allington Pippin, Blenheim Pippin, and Newton Wonder have rarely, if ever, been finer; while Beauty of Bath, Lord Derby, Domino, Lane's Prince Albert, and Bramley's Seedling failed to attain their usual size where the crop was a full one, although thinning was done where it seemed to be desirable.

Continued Dropping.

As it was feared would be the case, the late varieties of Apples followed the early kinds in dropping profusely. Only the latest in my orchards now remain ungathered, and all will be secured in the course of a few days, because the loss from continued dropping is unendurable. There is no doubt that Apples have ripened prematurely, and in that case picking earlier than usual is good policy. So far as the fruit has been tested, picked fruit appears to have kept quite as well as usual since the hot weather ended. The loss from dropping has been all the greater in consequence of the lack of the usual demand for very cheap Apples. In previous seasons I have had no difficulty in selling small, specked or damaged Apples to higglers; but this year they have taken so few that it has been necessary to sell tons of damaged windfalls at £1 per ton for cows, pigs or sheep food. In this respect the drought created a demand, as the meadows and pastures in September were almost entirely bare of feed.

Norfolk Beauty.

For the first time my young trees of this magnificent variety were allowed to bear a considerable crop of fruit. For uniformity of large size nothing else in my orchards equals this Apple. There has been some dispute as to its keeping capacity. With me it began to turn yellow a week after being picked, and therefore it was sent promptly to market, making the top price for a culinary variety. In my opinion it should be sold as quickly as possible after being gathered, as its value is reduced by its turning yellow, a change quickly followed by rotting. A defect in some of the Apples noticed was a deep, though small, scab-hole in the centre of the crown. If this is a general defect, it is a somewhat serious drawback to the great merit of Norfolk Beauty.

Improved Prices

Since the middle of September there has been a rise from the miserable glut prices of Apples. Up to the time of writing, however, it has needed something extra fine in a culinary variety to make over 3s. 6d. a bushel, while great quantities of good firsts have given a gross return of only 2s. 6d., from which expenses referred to last month (page 170) have to come off. It is difficult to ascertain from market quotations what to expect a salesman's return to be. For example, the top prices quoted for Apples in London in two trade papers last week differed by 6d. to 1s. 6d. per bushel for the same varieties. *A Southern Grower.*

THE BANDING OF FRUIT TREES.

The following observations were the results of some very interesting experiments in banding, carried out on about fifty trees during two successive winters. The trees selected comprised Apple, Plum, Damson and Filbert, with one or two forest trees.

Time of Experiments.

The first series of bandings began in early September and continued through the winter till the end of February. In September, especially when the season had been dry and fine, the Winter Moth (Cheimatobia brumata) (fig. 106) was caught in fairly large numbers; but October, especially the latter part of the month, gave the best result so far as numbers were concerned. Quite frequently 50 to 70 moths were to be found on one band during the one month. As winter wore on the numbers gradually decreased, until when February came only a few isolated specimens were taken.

It was found that a severe spell of frost caused a check in the numbers, as noticed day by day. For example, the first day after the setting-in of the frost one found moths in plenty. These were probably driven upwards to find shelter in the branches, but as the frost continued their numbers showed a sudden decrease. This was undoubtedly due to the fact that the severe weather caused the chrysalis to remain dormant for an extra length of time. It is very probable, too, that the continued severity killed several before they sought the trees for shelter.

Height of Bands from the Ground.

Generally speaking, the bands were placed one foot apart, with the lowest just off the ground, some trees having only one while others had three or more. The bands were changed weekly in some cases—monthly in others—in order that the field of investigation might be wider. It was noticed that the majority of moths caught were on those bands about five and six feet from the ground. Next in usefulness seemed to be those at the base, proving conclusively that many females begin to crawl straight from the ground. In some cases females were found higher up the tree on the second or third band, while the base band seemed to have been skilfully avoided. This seemed to point to the probability of the females being able to take small leaps. Certainly these cases were more frequent where the lower band was a narrow one. Another and more likely probability is that they were carried in some way by the males.

Width of Bands.

Bands of widths varying between 2 inches and 12 inches were tried, and by placing a wide band some distance above a narrow one it was discovered that most of the moths, especially the Mottled Umber (Hibernia defoliaria), were able to cross bands of four inches or less, while not a single moth was taken on any band above the 12 inch one. The narrowest absolutely effectual band was 10 inches in width, and most of the victims were found on the higher half of this.

Constituency of Material.

English v. American Material.

It must be stated here in all honesty that the American preparation proved superior to the English in every case. Picked trees were treated at various heights in the following ways :—

(a) Band of English material above one of American.

(b) Band of American material above one of English.

(c) One band with upper half of American and lower half of English material.

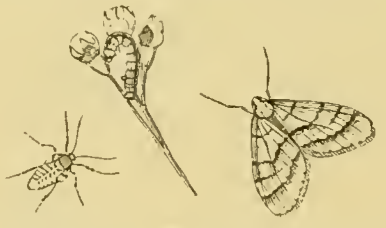


Fig. 106.—The winter moth; larva and perfect insect. The winged insect is the male.

(d) One band with upper half of English and the lower half of American material.

All the bands used were of the 10 inch variety and were renewed at certain intervals.

On examination it was found that moths had dragged their way over the English band, but had been securely held on the American, and, where the American band was the lower one, not a single specimen of a female moth could be found on the English one above. Similar results were obtained in experiments (c) and (d). It might also be noted that many males and insects of other kinds were caught by the American preparation. Thus the American preparation easily demonstrated its superiority. It was also less troublesome, for to be effective the English bands required renewing every five or six weeks, while a couple of American bands lasted the winter.

From personal experience I firmly believe that the English preparation failed owing to its thin constituency. In every case the American was much thicker, and rarely ran off the bands, while quite frequently the English material was found on the tree trunks.

It was also found that a little treacle mixed with the grease seemed to offer an attraction to the males, several varieties being caught quite late in the season.

The butter parchments used by grocers and provision merchants make excellent bands. Good-sized sheets may be obtained for ½d. each. A sheet makes two wide bands and the paper stands the weather well. *A. Hemming Barker.*

SCOTLAND.

Early Chrysanthemums at Glasgow.—The early Chrysanthemums in the Old Camphill Garden, in the Queen's Park, at Glasgow, are now at their best and are bearing masses of fine blooms. Many different varieties are cultivated, among others Polly, Goacher's Crimson and Robbie Burns.

Glasgow Public Bowling Greens.—Additions are still being made to the number of public bowling greens provided by the Town Council in connection with the city parks. Two new greens have just been completed in North Oswald Street, two in Richmond Park, and one in Alexandra Park. Several others are also in hand and will shortly be completed. From an official statement just issued, it appears that during the season of 1914, which closed on October 3, no fewer than 333,800 players used the public bowling greens of the city of Glasgow. The receipts amounted to £2,571.

Caledonian Railway Station Gardens.—The directors of the Caledonian Railway Company have issued the list of awards for the best-kept stations on their system. There are 20 first-class premiums of £5 each; 30 second-class of £3 each; 40 third of £2; and 50 fourth class. In accordance with the rules, a number of stations were debarred for this year on account of having gained certain prizes previously. The stations receiving first-class premiums were :—Crieff, Forfar, Wemyss Bay, Alyth, Inverkip, Thorntonhall, Brechin, Coulter, Comrie, Peebles, Moffat, Dunning, Dubton, Kentallen, Wilsontown, Stobo, Bowling, Currie, Harburn and Lyne. *Corres.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

A Land Cure for Unemployment.—In Great Britain alone there are over 11,000,000 acres of arable land devoted to the production of cereals, root crops, Cabbage crops, Peas, Beans, etc., and it may be safely said that practically the whole of these 11,000,000 acres are turned over with the plough. This is chiefly because agriculturists are under the impression that ploughing is the best and most economical method. As a matter of fact, ordinary ploughing is one of the worst and most defective methods of cultivation. Would it not, therefore, be wise—especially at this critical period in our national history—to substitute as far as possible the superior method of cultivation by the spade? Most people will probably consider this a much more costly method of tillage, and one that would more than absorb the profits from the land. Such, however, is not the case, as may be seen from the details given in *Commercial Gardening*, Vol. I., p. 103. There it is pointed out that an acre of dug ground will yield better and more saleable crops than an acre and a half of ploughed land of a similar nature. The reason is not far to seek. The plough merely turns over roughly 4 or 5 inches of the crust at a cost of 15s. to 25s. per acre, while the spade or fork will not only break up the soil to a depth of about 12 inches, but will also bring about a much finer tilth, at a cost of 40s. to 55s. per acre. This enables more rain and air to enter the soil, more plant foods to be liberated, and the rootlets to penetrate much deeper, so that they do not suffer in either dry, hot seasons or in cold, wet ones, as they undoubtedly do in land that has been only ploughed in the ordinary way. The result—provided, of course, that crops have not been so crowded as to become suffocated later on—is that two, three and often four times more produce can be secured from dug land than from ploughed land. Thus the apparent extra cost of labour would be more than met by the heavier and better crops, and there would be the advantage of having the soil in a deeper, better and more fertile condition for the succeeding crops. In addition to this, dug land is always freer than ploughed land from insects, pests and weeds, an important item not to be overlooked. This is the cure for unemployment. According to the nature of the soil an acre of land can be dug about a foot deep in one day by from 12 to 20 men. The same area would be ploughed about one-third of the depth by one man and a pair of horses in a day, or day and a half to two days, after which come harrowing and rolling. The difference in cost is relatively little in actual cash, but there is no comparison in the quality of the work done by the two methods. Assuming that one man can dig an acre of land in 16 days—or, in other words, 16 men can dig an acre in one day—it is not difficult to see that a vast army would be required during the winter months to dig the 11,000,000 acres of arable land in Great Britain, and thus make them yield crops that can never be obtained by ordinary ploughing. *John Weathers.*

A Good Crop of Melons.—Our gardener, Mr. Watkins, has raised sixty-one Melons in a cold frame of four lights here this season. The fruits weighed altogether 105 lbs. The varieties were A1 and Emerald Gem. *Plâs Dinas, Carnarvon, N. Wales.*

Torquay Public Gardens.—May I add a note to your interesting description of these gardens in the issue for September 19? In my first visit to the gardens I was very much impressed with their general tropical appearance and also with the remarkably free growth of the graceful small-leaved plant Muehlenbeckia complexa, which, starting from the ground level, covered a wide range of space and attained to a great height, scrambling in and over other vegetation up the face of the cliff in a truly remarkable manner. I am informed by Mr. J. B. Dyer, the gardener, that the plant has been undisturbed for twenty years. Mr. Dyer also informs me that the plant of Cobaea scandens, which entirely covers the front of his cottage, was planted three years ago. *John R. Jackson, Lympstone, Devonshire.*

Dulwich Chrysanthemum Show.—It was intended to abandon the 21st annual Chrysanthemum show at Dulwich fixed for November 12 and 13, but on further consideration the committee has decided to hold it as usual, and to devote the whole of the money paid for tickets of admission to the Prince of Wales' Relief Fund. To make it possible to hand the whole takings to the Fund, the committee has agreed to pay for hall, printing, etc., in fact, the entire costs, from funds in hand. Exhibitors, both trade and amateur, have patriotically agreed to exhibit as usual, but to forgo any prize money, receiving, instead, cards denoting the merits of their exhibits. The exhibition was to have been held at the Dulwich Baths, but as these are occupied by Belgian refugees, it will take place at the St. Barnabas Hall, Dulwich Village, on November 12, from 3 p.m. to 10 p.m., and from 12 to 10 p.m. on November 13. It is felt that many who have not yet subscribed to the Relief Fund will be inclined to assist it through this medium, when they know to what purpose the money will be placed. Tickets, 6d. each, may be had on application. *R. B. Leech, Hon. Secretary, Woodhall College, Dulwich Common, S.E.*

Fruits of the Double-flowered Peach (see p. 239).—I am forwarding you fruits of the Double-flowered Peach, grown in these grounds, also some fruits of the Almond, a good-sized tree of which is laden with fruit. I also enclose a flowering spray of Eucalyptus Gunnii, which has been full of flower, but is now nearly over. The trees are about 40 feet in height, and have been planted for nearly 20 years. I have taken seed from them and raised young plants. Enclosed is a piece of the bark, which has a peculiar way of peeling off. *J. Barnard, Mostyn Hall Gardens, Mostyn, N. Wales.*

Eucalyptus Globulus Flowering in the Open.—I am enclosing a flowering spray of Eucalyptus Globulus. The tree from which the spray was cut I raised from seed and planted it in the open eight years ago. The plant is now 30 feet high, and the stem is 16 inches in circumference at the base. No protection is afforded in the winter beyond what it receives from a wall 12 feet high. It is a long way above the wall now, and the top is exposed to the winds from the north-west and south-west. I should be pleased if you could let me know if my specimen is uncommon, as I have not seen so large a tree before so far from the south, and also if the branch is bearing flowers or fruits. There is a second tree by the side of the first one, but not so tall, being 25 feet high. Two years ago this tree developed two strong growths from near the base, and it is now a fine specimen with leaves much broader than the other. *F. White, Whitehouse Gardens, Chandlers Cross, Croxley Green, Hertfordshire.*

[The shoot bears unopened, fleshy flowers in the leaf axils. If you remove the cap you will find a ring of stamens and the pistil. This Eucalyptus survives mild winters, such as we have experienced now for several years past, but you will probably lose it in a time of very severe frost.—Eds.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

October 6.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Messrs. A. Worsley, W. C. Worsdell, J. Fraser, J. Ramsbottom, R. H. Pearson, and F. J. Chittenden (hon. secretary).

Hybrid Saxifrage.—Mr. Fraser showed a hybrid Saxifrage which had appeared in his garden, evidently a cross between S. granulata and one of the mossy Saxifrages, probably S. Rhei. It produced leaves in autumn somewhat intermediate between those of its putative parents. The inflorescence is about 12 inches in height and the white, cup-shaped flowers are tinted with red.

Sempervivum Chrysanthum.—Mr. Worsley showed an inflorescence of this plant, and remarked that apparently two forms are grown in gardens under this name, one having lateral inflorescences only, the other having a large terminal inflorescence.

Malformation in Pinus Thunbergii.—Mr. W. C. Worsdell exhibited a curious growth of this Pine from Sir Edmund Loder's garden at Leonardslea, in which the normal shoot foliage spurs were replaced by recurved fleshy scale leaves, and in some cases by a pair, probably homologous with the paired ovuliferous scales of the Pine cone. Here and there an abortive female cone occurred. A fungus was present in all parts of the shoot, and this had probably induced the malformation.

Black Apple.—Mr. I. A. Walker, of Woodberry, Sydenham Hill, S.E., sent a perfectly black Apple. Only once before has an Apple having this appearance been shown before the Committee, and on that occasion Dr. M. C. Cooke attributed the appearance to an attack of the fungus Sclerotinia fructigena (= Monilia fructigena), the cause of brown rot of various fruits.

TRIAL OF SUNFLOWERS.

September 25.—A sub-committee of the Royal Horticultural Society's Floral Committee met at Wisley on September 25, and recommended the following Awards to perennial Sunflowers, which were confirmed by the Council on the 6th inst. :—

Awards of Merit.

Helianthus multiflorus plenus (Barr), *H. rigidus Rev. Woolley Dod* (Barr), *Helenium autumnale superbum rubrum* (Ruys), *H. Riverton Gem* (Barr, Ruys), *H. autumnale grandiflorum* (Barr), *H.a. Gartensonne* (Barr).

NATIONAL SWEET PEA.

ANNUAL MEETING.

October 13.—The annual general meeting of the National Sweet Pea Society took place on Monday last at the Westminster Palace Hotel, Victoria Street. The chairman, Mr. F. W. Harvey, presided, and there were about forty members present. After the minutes of the previous meeting had been read by the secretary the chairman presented the annual report of the committee, from which we extract the following paragraphs :—

Extracts from the Report.

The season 1914 was not an ideal one in this country for Sweet Peas. The seed crop, however, has, in most districts, been moderately good.

Trials were held as arranged at the Burbage Experimental Station, under the supervision of Major Hurst. One hundred and ten stocks were tested, and the classification varieties were grown for comparison. The committee regrets that more members did not take advantage of the opportunity of visiting the trials.

The Floral Committee met at Burbage on July 9 and 10, eight of the nine members and the secretary being present. A First-class Certificate was awarded to trial No. 94, and this was reserved for the Silver Medal. This variety was sent by Mr. Alex. Malcolm, of Duns, and has been named Fiery Cross. A F.C.C. was also awarded to trial 184, sent by Messrs. Dobbie & Co., of Edinburgh, and named Jean Ireland. An Award of Merit was granted to trial No. 112, sent by Messrs. Dobbie & Co., and named Royal Purple. A full report of the work of the Floral Committee, with the number of votes recorded, and by whom they were recorded, has been posted to members, and will be published in the Annual.

Owing to the extraordinary weather experienced during the second week in July the London Exhibition was not so large as usual. Many competitors, and also a large number of trade exhibitors, were compelled to withdraw at the last minute.

The committee had arranged for the provincial show to be held at Belfast on July 24, in conjunction with the Belfast Rose and Sweet Pea Society. The last week in June the secretary received an intimation from the secretary of the Belfast Society to the effect that owing to the political unrest in Ireland it had been considered advisable to abandon their show for this year.

In response to the offer of a prize of ten guineas by Mr. H. A. Perkin, supplemented by the Gold Medal of the Society, several streak "cures" were sent in for trial. These were sent under numbers to four superintendents in different parts of the country for testing, and in every case the reports agreed that the materials supplied were ineffective.

During the year that has just ended 145 new members have joined the Society, and 72 have resigned. Over 50 of these resignations have been received since the outbreak of the war. Twenty-two new societies have been affiliated, and eight have resigned.

In accordance with the resolution passed at the last annual general meeting a special general meeting for the purpose of considering and adopting or rejecting the proposed new rules was held on April 20, at the Hotel Windsor, Victoria Street, Westminster. After considerable discussion the proposed new rules were rejected by a large majority.

Owing to the fact that a considerable portion of the available ground at the Burbage Experimental Station will in future be required for government work Major Hurst was reluctantly compelled to inform the committee that he would not be able to conduct the trials next year. The committee feel that although there is some depression existing owing to the war trials ought to be held as usual in 1915, and have therefore arranged with Mr. Reginald Christy, of Roxwell, near Chelmsford, to grow the varieties sent in.

The Society has sustained a severe loss in the death of Mr. George Gordon, who was the first president. He was also chairman of committee for the years 1900, 1901 and 1902.

Owing principally to the war the committee regret that the year has not been a good one so far as finance is concerned. The balance brought forward from last year was about £30 less than in 1912-13. Outstanding accounts from last year amounted to about £37. Gate money at the London show amounted to £19 19s., as against £26 17s. in 1913. The receipts for novelty trials are £3 17s. 6d., as compared with £23 12s. 6d. last year. This is partly due to the fact that £8 17s. 6d. for 1914 trials was received before the last annual general meeting. The trials expenses this year amount to £64 5s. 10d., as compared with £48 10s. 2d. in 1913, the increase being mainly due to the decision that the seeds should be sown in autumn instead of spring. Outstanding accounts with the printers, including £21 postage on Annuals and Schedules, amount to about £180, and this the committee propose to pay with the balance in hand and £150 from the deposit. The Society will therefore start the year 1914-15 free of any liability.

This year two challenge cups., viz., the "Horace Wright Challenge Bowl" and the "Hawlmark Cup," have been won outright. The committee venture to hope that these will be replaced. Arrangements have been made to hold the London show at the Royal Horticultural Hall, Westminster, on Tuesday, July 13, 1915, the only suitable date that the hall could be obtained.

The financial statement showed receipts amounting to £782 14s., including £200 on deposit account and £262 19s. 5d., the amount of subscriptions for 1914, whilst the expenditure was £755 10s., leaving a credit balance in the current account of £27 4s.

The chairman moved the adoption of the report and balance-sheet. He regretted that the financial results of the past season were not so good as usual. There had been a number of extraneous items to meet, including outstanding accounts from last year, amounting to about £37. The secretarial expenses had totalled £111, for it would be remembered that an honorarium of seventy guineas was voted to the late secretary at the last meeting. The gate-money at the show was less by £7 than in 1913. They hoped to effect certain savings during the coming year, and the committee considered it advisable to withdraw £150 from the deposit account in order to clear up all liabilities, £50 still remaining on deposit. The war had had a bad effect on the membership, but during the twelve months they had enrolled 145 new members. Twenty-two new societies had joined in affiliation, which was more than double that of last year, but against this must be set eight which had resigned. The committee had considered the advisability of holding trials in 1915, and had decided to do so as usual, in order that matters should go on as normally as possible. He was glad that Mr. Christy, who had considerable experience with Sweet Peas, had consented to act as trials superintendent. The committee considered it inadvisable to hold a provincial exhibition in the season 1915. He had pleasure in proposing the adoption of the report and balance-sheet. Mr. Brunton seconded, and the motion was carried unanimously.

The officers and various committees were next thanked for their services, and the meeting proceeded to the election of scrutineers of the ballot, Messrs. Quick, Pinches and Stevens being appointed.

Certain members had notified the secretary of suggested alterations to the Rules, and the consideration of these was the next business. Mr. E. W. King suggested alterations, amendments and additions to Rules 14, 16, 19, 22, and 25. With regard to Rule 14 his proposal was as follows :—

> "The Floral Committee to work in three sections, places to be balloted for, one section then to work from 1 onwards, another section backwards, and the other section from about centre to end, and from 1 to the number they started. Each section to record their votes on cards provided, not divulging nor hinting to another section what they have marked on the cards, and after inspection the cards to be handed to the secretary, and on total of 9 votes or members present, the variety which has received seven-ninths of votes of the members present to be awarded a First-class Certificate. The variety securing a clear majority of votes to have an Award of Merit. Any member who has voted for a variety in which he or she has any financial interest such vote shall be struck out."

The proposal did not meet with favour, the feeling of the meeting being that the Floral Committee should be allowed to work in their own way as at present; moreover, the new conditions would involve a waste of time. On being put to the vote the motion was negatived by 30 votes to 4. As the alterations to Rules 16, 19 and 25, proposed by Mr. King, were governed by his proposed amendment to Rule 14, he withdrew them. With regard to Rule 22, the alteration he proposed was as follows :—"The Floral Committee shall indicate not more than three varieties which they consider to be the best in each colour class, and shall place them in alphabetical order." Mr. Curtis, seconding Mr. King's proposition with regard to this rule, pointed out that in some instances there were not more than one variety of a certain colour, and that the alteration was necessary to make the rule workable. The amendment was carried by the unanimous vote. A new rule proposed by Mr. Harvey—"The committee shall have power to refuse membership to any person"—was also adopted, and it was agreed that it should be Rule No. 4.

Mr. Ireland proposed that Rule 20 should read "No award of any kind to be made to any variety at the trials that contains more than one Rogue." Mr. Thomas Stevenson considered that the adoption of such a motion would be a retrograde movement, and he considered that the question of the purity of stocks at the trials had been thoroughly thrashed out and settled long ago. Mr. Ireland's proposition found only two supporters, and was therefore lost.

The election of officers was the next business. Miss H. C. Philbrick was elected president; Mr. Edward Sherwood was re-elected treasurer; Mr. E. H. Christy was elected chairman of committee; Mr. Reg. Christy superintendent of trials for 1915; and Mr. H. D. Tigwell secretary at a salary of £50. Four vacancies on the general committee were filled by the election of Messrs. B. Peyman, E. R. Janes, T. A. Weston, and F. W. Harvey. The provincial corresponding members of the committee were all re-elected, with the addition of Mr. Reekie, Bank House, Congleton. The election of nine members of the Floral Committee was by ballot, and the scrutineers announced that Messrs. R. Bolton, J. M. Bridgeford, C. H. Curtis, Arthur Hallam, George Herbert, Andrew Ireland, T. Jones, H. Smith, and T. Stevenson had been successful.

NATIONAL DAHLIA.

Following upon the great trial of Dahlias held during the season of 1913 by Mr. Reginald Cory, at Duffryn, Cardiff, it was decided last spring to conduct a trial on somewhat similar lines in Scotland, so as to ascertain whether the results obtained at Cardiff would be maintained in the North. The National Dahlia Society accepted the offer of Mr. Robert Fife, of Messrs. Dobbie and Co., Edinburgh, to conduct the trial in the firm's grounds there. The varieties under trial were, as far as possible, the same as those grown at Cardiff in 1913, and each variety was represented by two plants.

Those who contributed to the Scottish trial, and who sent all plants free of charge, were Messrs. R. H. Bath, Ltd., Wisbech; Messrs. J. Cheal and Sons, Crawley; Mr. J. A. Jarrett, Anerley (an amateur); Mr. S. Mortimer, Farnham; Mr. J. B. Riding, Chingford; Messrs. W. Treseder, Ltd., Cardiff; Mr. Charles Turner, Slough; Messrs. T. S. Ware, Ltd., Feltham; Mr. J. T. West, Brentwood; and Messrs. Dobbie and Co.

The varieties on trial numbered 458 (in addition to many seedlings), grouped as follows: Cactus, 113; Bedding Cactus, 11; Paeony-flowered, 124; Pompons, 42; Decorative, 45; Collerettes, 103; Show and Fancy, 47; Singles, 36; with some other sections represented by fewer varieties.

The inspection took place on September 14, and the following gentlemen were appointed to make the awards from a garden decorative point of view: Mr. J. E. McHattie, Superintendent of Parks, Edinburgh; Mr. J. Whitton, Superintendent of Parks, Glasgow; Mr. Matthew Campbell, nurseryman, Blantyre; Mr. John Smellie, nurseryman, Busby; Mr. D. Kidd, gardener to Lord Elphinstone, Carberry Towers, Musselburgh; and Mr. J. Highgate, gardener to the Marquis of Linlithgow, Hopetoun House, South Queensferry.

The following varieties were granted three marks (XXX), which indicate the highest quality for garden decoration :

Collerette Dahlias.

Anerley Gem, Annan, Carl Bechstadt, Deveron, Doon, Esk, Fascination, Forth, Henri Farman, Holyrood, Inchmarnock, Lugar, Leader, Liffey, Monarch, Nethan, Ouse, Parrot, Purity, Queen Bess, Queen Mary, St. Abbs, Skerryvore (see coloured plate in *Gardeners' Chronicle*, March 14, 1914), Tay, Thames, Tweed, Tuskar (see coloured plate in *Gardeners' Chronicle*, May 23, 1914).

Cactus Dahlias.

Amos Perry, Eclair, Firefly, Ivernia, Mrs. Freeman Thomas, Mrs. F. Grinsted, Mrs. F. Paton, Mrs. J. Barker, Mrs. Landale, Nimrod, Salmon Queen, Star, Vivid, Vulcan, Westhall Scarlet.

Paeony-flowered.

A. Roosevelt, Codsall Gem, Europa, Gen. Botha, Germania, Hortulanus Budde, H. J. Lovinck, Kakadee, Liberty, Lord Milner, Mafeking, Mozart, Paul Kruger, Pretoria, Primrose Queen, Queen Wilhelmina, Reynolds, Salome, Sparkler, Splendour, Weber.

Pompons.

Blush Gem, Crusoe, Daisy, Evelyn, Glow, Ideal, Ivy, Little Beeswing, Little Frank, Little Mary, Tommy Keith, Tommy Laing.

Single Dahlias.

Althea, Beacon, Cardinal, Grenadier, Mrs. W. Merry, Mr. E. D. Till, Mikado, Owen Thomas, Rosemary Bridge, Willie Fife.

Show Dahlias.

Duchess of York, Excellent, Prince Bismarck, Prince of Denmark, William Rawlings.

Decorative Dahlias.

Brentwood Yellow, Delice, Firefly, Jeanne Charmet, K. A. Victoria, Lorely, Loveliness, Mont Rose, Offenbach, Princess Juliana, Sulphurea, W. Goethe.

Other Sections.

Bedding Varieties.—Argos, Amanda, Barlow's Bedder, Charlotte, Gluckhauf, Marianne.

Cosmea-flowered.—Crawley Star.

Mignon or Tom Thumb.—Agnes, Jules Closson, Lancer, and Pembroke.

Anemone-flowered.—Mons. Ch. Dupont.

ROYAL HORTICULTURAL OF IRELAND.

October 9.—The monthly meeting of the Council was held on this date at the Society's offices, 5, Molesworth Street, Dublin. The schedule for the autumn show next year having been altered, and additional classes in the vegetable section arranged for, it was approved. The Society has decided to hold a show in the winter of 1915. The exhibits included a collection of Paeony-flowered and Collerette Dahlias shown by Messrs. Chas. Ramsay and Son, Ballsbridge; border Asters, shown by Messrs. Wm. Watson and Sons, Ltd., Clontarf; and Apples, staged by Captain Riall, Old Conna, Bray, for which a Cultural Certificate was awarded.

SCOTTISH HORTICULTURAL.

October 6.—The monthly meeting of this association was held in the Goold Hall, Edinburgh on the 6th inst. Mr. King, the president, was in the chair, and there was an attendance of 80 members.

A paper by Mr. D. M. Welsh, Spean Lodge, Spean Bridge, Inverness-shire, on "Vegetables for the Western Highlands," was read by the secretary. Mr. Welsh started by describing some of the weather conditions which the grower of vegetables had to contend with in Lochaber. At Spean Lodge the average rainfall was 67 inches. In 1913 it was 65.24 inches, the wettest months being March (8.87 inches) and November (11.43), and the driest, July (1.26), August (2.83), and October (5.95). There were 215 wet days, and on nine days over 1 inch of rain fell. The maximum temperature was 79° (Fahr.), and the minimum 12° (20° of frost). Frost was registered in every month of the year, and on July 6 there were 6°. This is exceptional, but what is known as Buchan's third cold period—May 9 to 13—is of annual occurrence, only it comes a little later, May 12 to 18, and at this time as much as 14° of frost have been registered. In early September the return of frost is certain; on September 1, 1906, there were 18°. The growing season is therefore restricted to the period from the middle of May to the beginning of September, approximately four months, and during that period the weather is often none of the best, and late and early frosts are accompanied by a moist atmosphere. The soil at Spean Lodge is peaty and as black as coal, so that it easily absorbs the sun's rays, and this, combined with the moisture which it contains, makes a kind of hot-bed, which produces very rapid growth; but evaporation is very active in dry weather, and after fourteen days drought plants show signs of distress. In 1913 vegetables were almost roasted, yet the longest spell of drought was twenty days. Under these conditions, to keep up a supply of vegetables all the year round requires skill and experience. The first crop is Spinach. Cabbage is the next crop, coming into use about the middle of June. The seedlings are raised under glass and grown in cold frames till April, when they are planted in the open ground, but they have to be covered at night during May. Autumn-sown plants fail to withstand the winter. Salad plants are plentiful by the middle of June, the moist conditions suiting them, and Peas and Cauliflower usually come into use about the same time. Cauliflower does well, and Radish grows to perfection. Broad Beans also do well, but French Beans and Scarlet Runners are uncertain crops. Potatos are "boxed" and planted out about the second week of April. Brussels Sprouts do well, and with Borecole and Savoys help to keep up the winter supply. Broccoli will not succeed. Of root crops Onions and Leeks succeed well, but, like all vegetables which require a long-growing season, they must be raised under glass. Beet grows too large, unless sown as late as June, and Jerusalem Artichokes produce stems 10 feet in height and heavy crops of tubers. Carrots do exceedingly well in fresh peat. This year crops are good. The highest temperature recorded was 84°, on August 20, and on September 17 10° of frost occurred.

The exhibits were :—Sixty varieties of Early-flowering, Japanese, Pompon and Single Chrysanthemums, and new American Antirrhinum "Nelroes," from Messrs. DOBBIE AND CO., Edinburgh (awarded a Silver Medal); 18 varieties of Potatos, from Miss BURTON, Polton (awarded a Silver Medal); 12 varieties of Apples, from Mr. W. G. PIRIE, Dalhousie Castle, Midlothian (awarded a Cultural Certificate); collection of vegetables, from Mr. D. M. WELSH, Spean Lodge (awarded a Cultural Certificate); flowers of Cobea scandens from the open, shown by Mr. C. COMFORT, Broomfield, Midlothian; dried Potatos, from Mr. GEO. P. BERRY, Board of Agriculture, London; and Asters Nancy Ballard and Glory of Colwall, from Mr. A. PORTER, Davidsons Mains, Midlothian.

Obituary.

WALTER B. KIRKPATRICK.—Mr. Walter B. Kirkpatrick, Dalbeattie, a keen amateur gardener, died on October 7. Deceased was station agent of the G. & S.W. Railway at Dalbeattie, and the station garden there was always in the first-class in the annual competition for premiums awarded by the directors of the railway.

THOMAS E. TOWERSON.—We regret to record the death of Mr. Thomas Edward Towerson, aged forty-five, who died on the 1st ult. at Spring Station, Kentucky, from injuries caused by his horse. The deceased, who was a native of Millfield, Keswick, Cumberland, was gardener to Dr. A. J. A. Alexander.

THE LATE MR. ARDERNE.—It was with extreme regret that I read in your last issue of the death of Mr. H. M. Arderne, of The Hill, Claremont, S.A. By his death South Africa loses one of its most ardent and enthusiastic amateur gardeners. As one who had the pleasure of serving him for 5½ years, I can testify to his horticultural enthusiasm, which was devoted especially to flowering trees and shrubs. As witness of his devotion to gardening, I may say that it was his daily custom to meet me at 6.30 a.m. in order to inspect and plan the work of his gardens. By 9 o'clock he was on his way to his office in Cape Town. Between 4 and 5 o'clock in the afternoon he would return, and then again his garden would occupy his attention until the dinner hour. Mr. Arderne was probably the first to introduce successfully the Rhododendron into South Africa, and at the time I left several hundred plants were growing luxuriantly. He purchased one of the early plants of Pink Pearl, and it became the king of the collection. How many times Mr. Arderne top-dressed that tree I cannot tell, but it certainly repaid him for all the care and attention he bestowed on this particular favourite. He was very proud of the famous specimen tree of Araucaria excelsa, which was 142 feet high at the time I was there. I remember on one occasion, after a severe gale during the night, meeting the deceased gentleman coming up the lawn in his pyjamas soon after six o'clock in the morning, on his return from a visit to see if the top of the giant had been taken out, as he was always afraid would be the case during severe storms. A very fine specimen of Bougainvillea spectabilis stood alongside the carriage drive. It was 40 feet high and as much through. Another favourite of Mr. Arderne's was a fine specimen of Paulownia imperialis, 40 feet high. What a magnificent sight this tree is, when in full flower, as I have had the pleasure of seeing it on a few occasions! I could go on describing many of the fine specimen trees which go to make "The Hill" famous, but I will conclude with recording my appreciation for one of the most kind-hearted and generous of men whose enthusiasm for horticulture knew no bounds. *H. Wilton, The Gardens, Hebers Mount, Ilkley.*

MARKETS.

COVENT GARDEN, October 14.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—EDS.

Cut Flowers, &c.: Average Wholesale Prices

	s.d. s.d.		s.d. s.d.
Arums (Richardias), per doz.	2 0- 3 0	Marguerites, per doz. bunches	1 0- 1 3
Carnations, per dozen blooms, best American varieties	1 3- 1 9	Michaelmas Daisies, per doz. bunches	3 0- 4 0
— smaller, per doz. bunches	10 0-12 0	Nerines, per doz. spikes	3 0- 4 0
— Carola (crimson), extra large	2 6- 3 0	Orchids, per doz.:	
— Malmaison, per doz. blooms		— Cattleya	9 0-10 0
— — pink	10 0-12 0	— Cypripedium,	1 6- 2 0
Chrysanthemum, specimen blooms, white, per doz.	2 0- 2 6	— Harrisonii, per doz. blooms	4 0- 5 0
— yellow per doz.	2 0- 2 3	— Odontoglossum crispum	2 0- 3 0
— pink ,,	1 9- 2 0	Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— bronze	1 6- 1 9	— white, per doz. bunches	3 0- 4 0
— white, medium per doz.	1 3- 1 6	Physalis, per doz. bun.	5 0- 6 0
— coloured, per doz.	0 9- 1 3	Roses: per dozen blooms, Bride	0 6- 1 3
— Spray, white, per doz. bun.	4 0- 6 0	— Frau Karl Druschki	1 0- 1 6
— — yellow, per doz. bun.	3 0- 4 0	— Kaiserin Augusta Victoria	1 0- 1 6
— — pink, per doz. bun.	4 0- 5 0	— Lady Hillingdon	0 9- 1 0
— — bronze, per doz. bun.	3 6- 5 0	— Liberty	1 0- 1 6
Eucharis, per doz.	3 0 —	— Madame A. Chatenay	1 0- 2 0
Gardenias, per box of 15 and 18 blooms	1 3- 2 0	— Melody	1 0- 1 3
Lapageria alba, per doz. blooms	1 6- 2 0	— My Maryland	0 9- 1 3
Lilium auratum, per bunch	2 6- 3 0	— Niphetos	1 0- 1 3
— longiflorum, per doz., long	1 6- 2 0	— Prince de Bulgarie	1 0- 1 6
— — short	1 9- 2 0	— Richmond	1 0- 1 6
Lilium lancifolium album, long	1 6- 2 0	— Sunburst	1 0- 1 6
— — — short	1 3- 2 0	— Sunrise	0 9- 1 0
— — rubrum, per doz., long	1 0- 1 3	— White Crawford	1 0- 1 6
— — — short	1 0 —	Statice, mauve, per doz. bunches	2 0- 2 6
Lily-of-the-Valley, per dozen bunches:		— white, per doz. bunches	2 0- 3 0
— extra special	15 0 —	Stephanotis, per 72 pips	— —
— special	10 0-12 0	Tuberoses, on stems, per doz.	0 5- 0 6
— ordinary	8 0- 9 0	short, per doz.	0 3- 0 4
		Violets, English, per doz. bunches	1 0- 1 6
		— Princess of Wales, doz. bun.	2 0- 3 6
		White Heather, per doz. bunches	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Adiantum Fern (Maidenhair), best, per doz. bunches	3 0- 4 0	Croton foliage, doz. bunches	12 0-15 0
Agrostis (Fairy Grass), per doz. bunches	2 0- 4 0	Cycas leaves, per doz.	2 0- 9 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0	Eulalia japonica, per bunch	1 0- 1 6
— medium, doz. bunches	12 0-18 0	Lichen Moss, per dozen boxes	9 0-10 0
— Sprengeri	6 0-12 0	Moss, gross bunches	6 0 —
Autumn foliage, various, per doz. bunches	4 0- 6 0	Myrtle, doz. bnchs. English, small-leaved	6 0 —
Carnation foliage, doz. bunches	3 0- 5 0	Pernettia, well berried, per doz. bunches	8 0- 9 0
		Smilax, per bunch of 6 trails	1 0- 1 3

REMARKS.—The supplies throughout the market appear to be larger this week, but trade is very dull. There are one or two fresh varieties of white Chrysanthemums, two of the best being Money Maker and Mrs. Roots. The bunches of white sprays are more plentiful and their prices are lower. An abundant supply of English single Violets has reached the market, the variety Princess of Wales being exceptionally good. Consignments of Stephanotis are again arriving from Guernsey, also a few boxes of Eucharis. There are good specimens of Gardenia, but there is no special demand for these flowers.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Aralia Sieboldii, dozen	4 0- 6 0	Cacti, various, per tray of 15's	4 0 —
Araucaria excelsa per dozen	18 0-21 0	tray of 12's	5 0 —
Asparagus plumosus nanus, per dozen	10 0-12 0	Chrysanthemum, 48's, per dozen	6 0-12 0
— Sprengeri	6 0- 8 0	Cocos Weddeliana, 48's, per doz.	18 0-30 0
Aspidistra, per doz., green	18 0-30 0	— — 60's, per doz.	8 0-12 0
— variegated	30 0-60 0	Croton, per dozen	18 0-30 0
Begonia, Gloire de Lorraine, 48's, per dozen	10 0-12 0	Cyclamen, 48's, per doz.	10 0-12 6
		Dracaena, green, per dozen	10 0-12 0

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s.d. s.d.		s.d. s.d
Erica nivalis, 48's, per dozen	10 0-15 0	Kentia Forsteriana, 60's. per dozen	4 0- 8 0
— — thumbs, per doz.	3 0- 5 0	— — larger, per doz.	18 0-36 0
— gracilis, thumbs, per doz.	3 0- 5 0	Latania borbonica, per dozen	12 0-30 0
— — 48's, per doz.	9 0-12 0	Lilium lancifolium album, pr. doz.	18 0-24 0
Ferns, in thumbs, per 100	8 0-12 0	— — rubrum, per doz.	15 0-21 0
— in small and large 60's	12 0-20 0	— longiflorum, per dozen	12 0-15 0
— in 48's, per dozen	5 0- 6 0	Lily-of-the-Valley	—
— choicer sorts, per dozen	8 0-12 0	— 48's, per dozen	21 0-30 0
— in 32's, per doz.	10 0-18 0	Marguerites, in 48's, per doz., white	—
Ficus repens, 48's, per doz.	4 6- 5 0	Pandanus Veitchii, per dozen	36 0-48 0
— — 60's, per doz.	3 0- 3 6	Phoenix rupicola, each	2 6-21 0
Geonoma gracilis 60's per dozen	6 0- 8 0	Solanums, 48's, per dozen	8 0-.9 0
— larger, each	2 6- 7 6	Spiraea, white, 32's per dozen	6 0- 8 0
Kentia Belmoreana, per dozen	5 0- 8 0	— pink, 32's, per dozen	9 0-12 0

REMARKS.—In addition to the plants quoted in the list, there are a few white Marguerites and Begonias, but Ericas are the chief subjects, and good plants can be bought very cheaply. There is a plentiful selection of Ferns, and the better varieties consist of Asplenium, Nephrolepis Todaeoides, N. Scottii, N. tuberosa and N. exaltata, Asparagus plumosus and A. Sprengeri, which can be obtained in thumb-pots, also small and large sixty-sized pots, are all good, well furnished plants.

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples—		Grapes (*continued*)—	
— Californian, Newtown Pippins, per box	6 0- 7 6	— English, Gros Colmar, per lb.	0 8- 1 0
— English dessert, per ½ bushel	2 6- 4 6	— Gros Maroc, per lb.	0 9- 1 0
— cooking, 1 bush.	2 0- 4 0	— Muscat of Alexandria	1 0- 2 6
Bananas, bunch:		— Canon Hall, per lb.	1 0- 3 0
— Medium	4 0- 4 6	Nuts, Brazils, per cwt.	60 0 —
— X-medium	5 0- 6 0	— Walnuts (English), per doz. lb. Doubles	8 0-10 0
— Extra	6 6- 7 6	— — Singles	4 0- 5 0
— Double X	8 0- 8 6	Pears, American, per barrel	15 0-30 0
— Giant	0 0-10 0	— Californian, per case	7 6-15 0
— Red, per ton	£20 —	— English, ½ sieve	2 6- 5 0
— Jamaica, p. ton	£15 —	— stewing, per bushel	2 6- 3 0
Blackberries, per peck	1 0- 1 6	Prunes, per ½ bus.	2 0- 3 6
Cobnuts, per lb.	0 4 —	Sloes, per doz. lbs.	2 0- 2 6
Cranberries, per case	9 0-12 0		
Damsons, per ½ sieve	1 6- 2 0		
Grapes: Alicante, per lb.	0 6- 0 9		
— Black Hamburgh, per lb.	0 6- 1 0		

REMARKS.—The market is well supplied with English Apples, both cooking and dessert varieties. There is a plentiful supply of English Pears, and a few Pears are arriving daily from France. A large consignment of American barrelled Pears, including the varieties Keiffer, Bdanjou and Beurré Bosc, reached the market this week. Grapes of all varieties are plentiful. Plums are still numerous, also Prunes, Damsons, Blackberries and Sloes. The supplies of Walnuts and Cobnuts have increased during the week, especially the large Walnuts known as doubles.—*E. H. R., Covent Garden, October 14, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Beans, French, per lb.	0 6- 0 8	Mint, per doz.	2 0- 4 0
— Scarlet Runner, per bushel	10 0 —	Mushrooms, cultivated, per lb.	1 6 —
Beetroot, per bushel	3 0- 3 6	— Buttons	1 6 —
Brussels Sprouts, per ½ bus.	3 6 —	Mustard and Cress, per dozen punnets	0 10- 1 0
Cabbages, per tally	8 0-10 0	Onions, per bus.	3 0 —
Carrots, per bag	3 6- 4 6	Parsley, per dozen bunches	1 0- 2 0
Cauliflowers, per tally	10 0-12 0	Radishes, per doz.	0 9 —
Celery, per doz. bun.	9 0-12 0	Sage, per dozen	2 0- 4 0
Corn cobs, per doz.	1 0- 1 6	Tomatos, English, per doz. lbs.	2 6- 3 0
Cucumbers, per flat	4 0- 5 0	— seconds	1 0- 1 6
Garlic, per lb.	1 0- 1 3	Thyme, per dozen bunches	2 0- 6 0
Horseradish, per bundle	4 0- 5 0	Turnip, English, per bag	3 6- 4 6
Leeks, per dozen	1 6- —	Watercress, per doz.	0 4- 0 6
Lettuce, round, per bus.	1 6- 2 0		

REMARKS.—English Tomatos and Cucumbers are both plentiful. The supply of cultivated Mushrooms is limited. The season for Peas, Scarlet Runners and Vegetable Marrows is nearly over, and there are fewer Cauliflowers, Cabbages and Brussels Sprouts. Trade in all departments is fairly good.—*E. H. R., Covent Garden, October 14, 1914.*

New Potatos.

	s. d. s.d.		s. d. s.d.
Bedford	3 0- 3 6	Kent	3 0- 4 0
Blackland	2 9- 3 0	Essex	3 0- 3 3
Lincoln	3 0- 4 0		

REMARKS.—Trade is still very slow. Supplies are moderate, and there are heavy stocks of tubers in London. Best Potatos are scarce.—*E. J. Newborn, Covent Garden and St. Pancras, October 14, 1914.*

ENQUIRY.

Can any correspondent give me a receipt for making Damson wine? *W. W.*

[To four gallons of Damsons add five and a-half gallons of soft water. Allow the fruits to simmer gently until they are tender, when 15 lbs. of sugar and 6 ozs. of red tartar should be added. The juice should be strained and allowed to ferment, when it should be bottled.]

Answers to Correspondents

Apple : *W. C., Berks.* The Apple said to have been raised from a pip very much resembles Blenheim Pippin in size, shape and texture, colour, and flavour of flesh, but the skin has more red colouring than is usual in the case of Blenheim Pippins. Keep the plant a time and observe its habit of growth, comparing it specially with Blenheim Pippin, with a view to testing the qualities of the novelty. Next season you might exhibit fruits at the R.H.S. meetings.

Begonia Gloire de Lorraine : *H. L.* The wart-like excrescences on the roots are caused by eel-worms (microscopic nematodes), a pest for which there is no cure. It is most probable that the soil, as well as the plant, is infested, and it should be sterilised by heating, or failing this removed to some out-of-the-way part of the garden and buried deeply. The plants themselves should be burnt, for eelworm is a dangerous pest capable of spreading to other plants.

Begonia Rust : *J. B.* The brown, unhealthy condition of Begonia leaves, known as rust, is caused by a mite, which may be destroyed by dipping the plants head downwards in Tobacco water. We frequently receive specimens of Begonias, and especially of the Gloire de Lorraine type, with brown, unhealthy leaves, that are due to an excess of atmospheric moisture and insufficient ventilation; but true rust is caused by the Begonia mite.

Blue Orchids : *H. B. J.* Of blue or violet-coloured Orchids there is not a very large selection. Vanda coerulea is certainly the most conspicuous member of the group, which includes also Vanda coerulescens and Rhyncostylis coelestis; Aganisia coerulea and Cyanea; Bollea coelestis and B. Lalindei if a good form is obtained; and some of the blue Disas of the D. graminifolia section provide clear blue tints of various shades. In Cattleya labiata and other large-flowered Cattleyas, Laelia pumila and other normally rose-coloured forms, varieties with a decided blue tint are known. Some of the forms of Masdevallia Harryana and M. Lindenii show shades of violet, and Zygopetalums, Calanthe Masuca, C. Dominyi, and some of the hybrid Odontoglossums have flowers almost wholly violet or mauve-coloured, or are spotted with those colours. Some of the forms of Dendrobium Phalaenopsis have white flowers with blue or mauve shade of colours.

Book : *A. H. Origin and History of Our Garden Vegetables and their Dietetic Value*, by the Rev. Professor Henslow, M.A. Obtainable from our publishing department, price 2s. 2d., post free.

Broccoli Diseased : *Whurmite.* To prevent further attacks of club root in Broccoli you should work into the soil some quicklime a month before planting.

Datura (Brugmansia) : *F. H.* The plant shown in the photograph is Datura arborea flore pleno, and belongs to the Nat. Ord. Solanaceae. The plant should be cultivated as a greenhouse shrub; you need not be afraid of over-potting it, or of giving it ordinarily rich soil, as it will soon fill a 6-inch or 7-inch pot with roots, and may require later on a pot with a diameter of 12 inches. It often loses some of its leaves during the winter, but in spring growth recommences, and in summer and early autumn it usually flowers freely, producing blooms from 7 to 8 inches in length. During the winter you can keep the roots almost dry, watering them once a fortnight or even more seldom; and so long as the plant is in a frost-proof house it is all the better not to provide it with a greater amount of artificial warmth. In the summer, however, and all through the period of growth and flowering, it is another matter, and the plant will then enjoy the stimulating atmosphere of a warm house. You may propagate it quite easily by taking cuttings about 6 inches in length and inserting them in sandy soil, plunging the pots in a hot-bed of about 60°. The best time to do this is the spring, when the growths, having become about 6 inches long, can be removed from the stem with a slight heel attached. D. arborea was illustrated in a Supplement to the *Gardeners' Chronicle*, January 5, 1901.

Fruits of Laurel : *Margaret Edmonds.* The fruits sent are those of Prunus Laurocerasus, the Common Laurel. They have no economic value either for food or for any other purpose.

Gooseberry Mildew : *E. B.* This is a bad case of American Gooseberry Mildew, and should be reported at once.

Grapes : *Gardener, Herts.* There is no fungus present on the Grapes, and the brown spots are caused by a deposit of moisture on the fruit. Employ more ventilation early in the day.

THE LATE H. M. ARDERNE, WHO POSSESSED ONE OF THE MOST INTERESTING GARDENS IN SOUTH AFRICA.

(See p. 269.)

Melon Diseased : *H. W.* The plants are affected with canker, and cannot be cured. Burn the diseased plants, and treat the soil with gas lime, or failing this with quicklime.

Names of Fruits : *W. E. P.* 1 and 5, Cellini; 2, Golden Noble; 3, Bismarck; 4, Bramley's Seedling; 6, Tower of Glamis.—*J. W.* 1, Graham; 2, Norfolk Bearer; 3 and 5, French Crab; 4, Manks Codlin; 6, Lemon Pippin.—*Havering.* 1, Vicar of Winkfield; 2, Duchess d'Angoulême; 3, not recognised; 4, Bismarck; 5, White Westling; 6, Scarlet Pearmain.—*Hortus.* 1, Lady Henniker; 2, Kentish Fillbasket; 3, Baxter's Pearmain; 4, Ribston Pearmain; 5, Gooseberry Apple; 6, Prince Albert; 7, King of the Pippins; 8, Warner's King.—*W. A.* 1, Deformed fruit, not recognised; 2 and 4, Doyenné du Comice; 3, decayed; 5, Beurré Diel.—*L. Dawes.* 1 and 3, Cox's Orange Pippin; 2, not recognised, a local variety; 4, Golden Noble; 5, Prince Albert; 6, Lord Derby.—*A. B., Bedford.* The fruit resembles Northern Spy, and is a beautiful specimen and very juicy.—*M. E.* 1, Lane's Prince Albert; 2, Cornish Aromatic; 3, Cellini; 4, Golden Noble; 5, Wealthy; 6, Roe's Autumn.—*Crowhurst.* 1, Gascoyne's Scarlet Seedling; 2, English Codlin.—*S. J. W.* 1 and 2, Allington Pippin; 3, Pitmaston Golden Pippin; 4, Sturmer Pippin; 5, Dumelow's Seedling (Wellington); 6, Lane's Prince Albert.—*H. G. P.* 1, Tower of Glamis.—*G. Baker.* Pears: 1, Louise Bonne of Jersey; 2, Beurré Hardy. Apples: 1, Hormead Pearmain; 2, Hanwell Souring; 3, deformed fruit, not recognised.—*G. A. Ure.* 1, Stirling Castle; 2 and 3, not recognised, most likely local varieties; 4, Winter Hawthornden; 5, Warner's King.—*E. P.* 1, Old Hawthornden; 2, Norfolk Beefing; 3, Dumelow's Seedling (Wellington); 4, no fruit; 5, Ribston Pippin; 6, Emperor Alexander; 7, Alfriston; 8, Cox's Orange Pippin.—*A. C.* 1, Hollandbury; 2, Ribston Pippin; 3, Dumelow's Seedling (Wellington); 4, King of the Pippins; 5, Cox's Pomona; 6, Mabbot's Pearmain; 7, Cox's Orange Pippin.—*G. Swailes.* P, London Pippin; Q, Golden Reinette; X, Mannington's Pearmain; Y, Gravenstein; Z, Doyenné du Comice.—*H. T. J.* 1, Winter Hawthornden; 2, Lady Henniker; 3, Annie Elizabeth; 4, Marie Louise.

Names of Plants : *J. B.* 1, Verbascum Lychnitis; 2, Lychnis dioica flore pleno.—*G. G.* Your specimens of Mesembryanthemum were not numbered. Send fresh specimens in flower, each specimen duly numbered.—*Constant Reader.* The garden names of the Ferns of which you send fronds are, 1 and 4, forms of the todaeoides section of crested Nephrolepis exaltata, a full set of which was illustrated in the *Gardeners' Chronicle*, December 13, 1913, pp. 424-425. No. 1 is variety compacta; 4, variety elegantissima, but each plant often bears very dissimilar fronds; 2, Davallia fijiensis; 3, Asplenium Nidus; 5, Cystomium falcatum; 6, Nephrolepis tuberosa; 7, Polystichum angulare. The last is the only British species. The others are greenhouse Ferns, and might be included in a competitive class for Exotic Ferns.—*Mons.* Bignonia radicans.—*A. R. S.* 1, Libocedrus decurrens; 2 and 3, Cupressus nootkatensis; 4, Cupressus pisifera var. plumosa; 5, Juniperus chinensis var.; 6, J. c. var. albo-variegata.—*W. B.* Probably Ailanthus glandulosa. A single leaf is not sufficient material.—*W. R. B.* Pholidota imbricata.—*W. C., Berks.* 1, Begonia incarnata and Nephrolepis exaltata cristata. The fruit is referred to under "Apple."

Pentstemons Diseased : *R. W.* The plants are injured by a fungus (Sclerotium sp.), and the soil is infected. Dress the soil with quicklime in April next.

Potatos with Warts : *M. C.* The disease affecting your Potatos is corky scab, a notifiable disease, due to the ravages of one of the Myxogastres called Sponogospora scabies. It is important that tubers showing signs of infection should not be used for "sets," as even if treated with formalin the parasite may not be killed Dress the infected land with quicklime, preferably in the spring. It is advisable to alternate the crops.

Privet Hedge : *T. E. T., Kilkenny.* Your Privet is affected with a fungus at the root. Water with 1 lb. of sulphate of potash to 3 gallons of water, twice a week for two weeks.

Tomatos : *J. R.* The blotchy appearance of your fruit is not the result of disease, but is due to a lack of potash in the soil. If the plants are indoors and intended for fruiting in winter you might apply either a little kainit or sulphate of potash, either as a top-dressing or in solution. Next season add a liberal amount of wood ash to the potting compost, as this material is a valuable source of potash manure.

Communications Received.—S. M.—W. E.—C. S. S—C. T. D.—W. T—D R. W.—C. T.—W. W.—A. H—S. D.—J. B.—F. P. W.—J. H.—Balvino—D. D. S.—F. W.—W. R. B.—W. T.—W. C.—F. N.—H. B.—H. S.—J. D.—S. O.—A. B.—R. H.—W. T. and Co.—A. L.—A. B.—A. R. S.—W. B.—G. G.—J. B.—G. A. U.—A. N.—T. D—D. Bois, Paris—E. Denis, Balaruc-les-Bains (France)—A. Truffaut, Paris.

THE
Gardeners' Chronicle
No. 1,452.—SATURDAY, OCTOBER 24, 1914.

CONTENTS.

Arnold Arboretum, autumn tints at the 28)
Ashtead Park, Surrey .. 274
Athens, the Garden City 271
Books, notices of –
  Gardening in the Tropics 272
Debating Societies .. 284
Elder tree trunk, a large 281
Flowers in season .. 279
France, notes from—
  The Louvre roof-garden 273
Fruit register—
  Apple Norfolk Beauty 275
  Strawberry, a new .. 275
Fruits, the naming of.. 281
Lamarck and the inheritance of acquired characters 278
Lightning and trees .. 280
Lilium Wallichianum . 275
Nurserymen and prisoners 279
Obituary—
  Beckett, C. 285
  Phippen, F. 285
Orchid notes and gleanings
  Hybrid Orchids .. 272
Pear Glout Morceau .. 279
Phaius Wallichii with adventitious growths 273
Pitwood, scarcity of .. 279
Plants, new or noteworthy—
  Iris Urumovii.. .. 272
Plants, inherited variation in 280
Potato, a blight- and frost-resisting variety of 280
Societies—
  Aberdeen Chrysanthemum 284
  Manchester & North of England Orchid 284
  National Chrysanthemum 284
  National Dahlia .. 284
  Royal Horticultural.. 281
State insurance of gardeners in the forces 281
Truffaut, letter from M. 279
War items 279
Weather and the crops 280
Week's work, the—
  Flower garden, the .. 277
  "French" garden, the 284
  Fruits under glass .. 277
  Hardy fruit garden .. 276
  Kitchen garden, the.. 277
  Orchid houses, the .. 277
  Plants under glass .. 276

ILLUSTRATIONS.

Apple Norfolk Beauty 276
Ashtead Park, Surrey 275
Begonia Mrs. Harry Barton 282
Laelia pumila alba 283
Mawson, Mr. Thomas H., portrait of 273
Phaius Wallichii, flower stem of, with adventitious growths 274
View of Athens. (Supplementary Illustration.)

ATHENS: THE GARDEN CITY.

(*See Supplementary Illustration.*)

GREECE evolved the style of architecture which has moulded the form of almost every building which has been erected in the modern Western world, and it is therefore particularly fitting that in the new era of town planning the capital should rise phoenix-like from its ashes.

It must also be a subject of congratulation to us in this country that an Englishman has been chosen to undertake this task. As is well known, Mr. Thomas H. Mawson has been called upon by the municipality of Athens to plan the modern city and to make it so far as possible a companion worthy of those remains which are, in the artistic sense, the property not only of the Greek nation but of the world at large.

In the course of conversation Mr. Mawson explained to a representative of this journal that his work at Athens consists of two distinct commissions. In the first place, he had been called upon by Their Majesties the King and Queen of the Hellenes to remodel the Royal park and the pleasure grounds surrounding the Royal palaces, and also the grounds to the Royal mausoleums. It was His Majesty's satisfaction with this work which led him to recommend Mr. Mawson to the municipality of Athens as the right man to replan the modern portion of that city. The King and Queen have been prime movers in the scheme, and the work has the cordial support of both the Government and municipality. The King himself is an enthusiastic gardener. The idea of Their Majesties lies mainly in the direction of an extensive planting of trees and shrubs, to produce fine landscape effects; but the plan for the city will, of course, include every feature incidental to a proper city plan, such as traffic, policing, fire control, and the general public utilities.

Athens is a city surrounded by magnificent hills, crowned by wonderful solitary ruins, and the first object of the King and Queen is to incorporate with these features great forest-like effects. Very considerable areas have already been cleared for the park system which forms a part of the city plan. For instance, the hills round the Stadium are already planted with Pines and Roman Cypresses, and there are also several great areas, now partly used as a military parade ground, which will become public parks. Some of these parks will extend to from fifty to sixty acres.

The first thought which will come to the minds of many people on hearing of town planning for Athens will be a fear lest a restless spirit of improvement should lead to interference with the priceless architectural relics for which the city is famous, or at least the desecration of their surroundings.

Nothing of this kind need be apprehended in the present case. Mr. Mawson is working in happy co-operation with the heads of the several schools of archaeology at Athens. He feels that the work on which he is engaged has interests so vast not only to every archaeologist and architect, but to every classical scholar throughout the world, that no effort should be spared to preserve from desecration or alteration all those areas which are sacred by association with the past.

This refers especially, of course, to the Acropolis, down the steep escarpments of which huge masses of Pines, Olives and Ilex are being planted, and in order to make way for them numbers of hovels or "shacks" which have been built by the poor (chiefly from the stones of the ruins around) are being cleared away. In no case will the Pines be allowed to interfere with the view of the ruins, as seen from the city, or of the city from the summit, and the effect, when complete, will be magnificent, the hillsides clothed with forests, and towering above them the ancient marvellous ruins. A good beginning has already been made with this work.

The Royal gardens surrounding the two palaces and some of the town squares are being treated in a purely formal manner, and some of the parks also will probably be quite formal, thus securing in the one city every gradation between the severest formality and the most picturesque composition. There are at present landscape specialists working on the plans in England, and Mr. Mawson and his son go periodically to Greece for further information; local labour will be employed, and it is hoped later to establish a large municipal nursery from which all the plants needed can be drawn.

Since the re-birth and the expansion of Greece the inhabitants of Athens are taking renewed pride in their wonderful city and are increasing its boundaries. Last year no fewer than fifty thousand persons were added to her population, chiefly rich people from newly-acquired territories. All these people add to the wealth of the city, and they are also intelligent enough to know that good city planning always pays, even in hard cash. They are making Athens a social centre, and it is this more than anything else that has created a popular demand for the present vast schemes of improvement.

There is another reason why Athens should advance in the near future and become a great social and tourist centre. The railway from Salonika is now being extended to Athens, and it will soon be possible to reach the city from Paris in about two days, a great advance upon the present conditions. The arrangement and general plan of a new central railway station will, therefore, form a part of the town-planning scheme. Mr. Mawson said: "To-day throughout the world the railway station is the great portal entrance to the city, just as the city gate with its frowning archway and suspended portcullis was in days gone by. It therefore provides splendid opportunities for architectural treatment, and in the present instance the trains of the future will arrive at Athens in the midst of a beautiful garden, which will form the centre from which the main boulevards will radiate." At the end of each boulevard a site will be arranged for an important building to close the vista, for, as Repton so justly remarks, "An avenue is futile, however beautiful it may be, if it ends in vacuity or leads to a workhouse." At the end of one of these boulevards it will probably be possible to arrange a site for a great museum; at the end of a second, the City Hall or Hotel de Ville; a third will probably lead to the new Houses of Parliament; and a fourth to the Temple of Theseus. The boulevards themselves will be treated in a broad and dignified manner, and every effort will be made to ensure that the buildings on either side shall, in their general scale and alignment, bear some relationship to one another and the boulevard itself. Wherever possible gardens will be laid out along their course, and each boulevard will be treated as an avenue, the trees to be used being chiefly Ilex and Quercus Aquifolium.

In the gardens of the town the first object is to secure shade, which is a long-felt need, and for this purpose Olives are being planted, and also different forms of the Orange (the bitter, not the sweet kinds). Flowering shrubs are to be used, especially Lilacs; but at present difficulty is experienced in obtaining plants owing to the strict Phylloxera laws. This is one reason for the establishment of local nurseries. For the present the Government will no doubt be induced to make a special concession, but hitherto the laws have been so strictly enforced that even the King has the greatest difficulty in obtaining imported plants.

The chief obstacle in the way of extensive gardening schemes in Athens is the lack of an ample supply of water, and this seriously hampers gardening operations at present; but as a preliminary to Mr. Mawson's city plan, now being prepared, the Government engineers are devising a scheme to procure abundance of water. This will be a costly undertaking and will require five years to complete, but eventually the supply will be as ample as that at Rome and will allow of artificial lakes, springs, fountains, canals and water gardens.

It may be mentioned that in the local nurseries, owing to the present want of water, everything is planted in pots and plunged in pits periodically flooded with water. This is the only way in which the plants can be preserved against drought.

In the present scheme the banks of the ancient river (which figures so largely in Hellenic literature) are to be preserved and laid out as boulevards and ornamental plantations. Here native trees and flowering shrubs, of which there is a great variety, will be used; but before this work can be successfully carried through it will be necessary to extend the municipal nurseries and to do a large amount of collecting and propagation.

A part of the plan will show a new garden suburb, where the dehoused poor who have been turned out of the shacks and hovels on the side of the Acropolis can be rehoused under the best conditions. In this work the King and Queen are taking the keenest interest.

A thoroughly up-to-date system of children's playgrounds is being devised, and will be fully equipped with suitable apparatus, more or less after the best American models. In a city of immense spectacular grandeur and interest it is felt that the children should be given every facility for amusement, without at the same time interfering with the amenities provided for others.

With regard to the time which will be necessary to complete the scheme, Mr. Mawson explained that there is no expectation of its being finished for at least fifty years. The work now being designed is intended primarily to provide a definite policy on which all future work may proceed. At present town building is usually done in patches without any concerted plan. With such a scheme as the present one work can be co-ordinated to form part of the general scheme, thus maintaining harmony in every part.

The appointment of Mr. Mawson and his sons to what is probably the most important work of its kind is the greatest compliment which could be paid to the art of landscape architecture as understood and practised in Great Britain. Accompanying this article we reproduce the late Sir Hubert von Herkomer's portrait of Mr. Thomas Mawson, and also, in the Supplementary Illustration, a view of the Acropolis.

ORCHID NOTES AND GLEANINGS.

HYBRID ORCHIDS.

(Continued from August 15, p. 126.)

Hybrid.	Parentage.	Exhibitor.
Cattleya Antiope	Chamberlainiana × Dowiana aurea	J. Gurney Fowler, Esq., and Messrs. Charlesworth.
Cattleya amabilis Fowler's var.	labiata × Warscewiczii	J. Gurney Fowler, Esq.
Cattleya Beatrice	Minucia × Dowiana aurea..	Hassall and Co.
Cattleya Bronze King	Davisii × Dowiana aurea	J. Gurney Fowler, Esq.
Cattleya General French	Ella × Dowiana	Sander and Sons.
Cattleya General Pau..	Luddemanniana × labiata	Sander and Sons.
Cattleya Gladys	Atalanta × Dowiana aurea	Sander and Sons.
Cattleya Katie	fulvescens × Dowiana aurea	A. and J. McBean.
Cattleya King Albert..	Parthenia Prince of Wales × Dowiana aurea.. ..	Stuart Low and Co.
Cattleya Princess Royal	Fabia × Hardyana	J. Gurney Fowler, Esq.
Cattleya Rosalind	Gaskelliana × Mrs. Pitt	Stuart Low and Co.
Cattleya venusta	Armstrongiae × intricata	H. T. Pitt, Esq.
Cypripedium Dryad	Psyche × glaucophyllum	W. H. St. Quintin, Esq.
Cypripedium pictum	nitens × glaucophyllum	H. T. Pitt, Esq.
Laelio-Cattleya Anthela Ashtead Park var.	L.-C. Phryne × C. Warscewiczii	Pantia Ralli, Esq.
Laelio-Cattleya Davidsoniae	L.-C. Bella × C. labiata	E. H. Davidson and Co.
Laelio-Cattleya Figaro	L. Iona × C. Dowiana aurea	Stuart Low and Co.
Laelio-Cattleya Penarth	C. Forbesii × L.-C elegans	J. J. Neale, Esq.
Odontioda crispilia	Odm. crispum × Oda. Cecilia	R. G. Thwaites, Esq.
Odontoglossum Uro-excellens	Uro-Skinneri × excellens	Richard Ashworth, Esq.

NOTICES OF BOOKS.

GARDENING IN THE TROPICS.*

This excellent guide to tropical gardening, which was first published in 1910 (see review in *Gardeners' Chronicle*, November 5, 1910, p. 331), met with such general acceptance that the edition was soon exhausted. The author, who is Superintendent of the Botanic Gardens in Ceylon, determined to take the opportunity to revise and extend the work before again offering it to the public, and, owing to the consequent delay, the book has been out of print for the greater part of a year. It will be generally felt that this time has been well used, for many of the chapters, already unusually instructive, have been re-written until some of them might be fairly described as exhaustive treatises. There are also many new features, including such subjects as the use of explosives in agriculture, dry farming, intensive or "French" gardening, culture of lac, inter-crops and catch crops, selection of trees, shrubs and plants for particular purposes, Ceylon indigenous plants, poisonous plants, sacred trees, curious seeds and fruits, and insectivorous and myrmecophilous plants. In our earlier review well-merited praise was accorded the numerous half-tone reproductions from photographs taken mostly by the author; in the present edition the number has been almost doubled and the quality maintained. A comprehensive index enables the reader to find easily a particular subject, notwithstanding the mass of details treated upon. Altogether the work may be thoroughly recommended to students of tropical agriculture, and to cultivators in Ceylon it is certainly an indispensable guide and reference book.

NEW OR NOTEWORTHY PLANTS.

IRIS URUMOVII.

In September, 1910, I visited the gardens of MM. Vilmorin at Verrières-le-Buisson, and noticed in a pot the remains of a small Iris which I did not recognise. Fortunately the plant had set seeds, and my request to be allowed to take a capsule of seeds was readily granted. From these seeds I succeeded in raising a number of plants, which began to flower in May, 1912. They were evidently related to I. graminea and to I. Sintenisii, but differed obviously from either. Their uniformity pointed to the fact that they represent a species, and I tried to make the description of I. Urumovii fit them. This species was first described by Dr. Velenovsky, of Prague, in the *Oesterreichische Botanische Zeitschrift* for 1902, p. 115. The description fitted the plants admirably except in one point, namely, the statement that I. Urumovii differs from I. Sintenisii by its non-glaucous foliage. This seemed, however, a fatal objection to the identification of my plants with Velenovsky's species, and I determined to await developments.

In April of this year I was able to examine the collection of European Irises which the Hon. N. C. Rothschild has recently got together, and found in it one sole survivor of some plants of I. Urumovii, which had been sent to him from the locus classicus of the species. I recognised it at once as being identical with my plants, and I began again to compare them with the original description. The only explanation of the latter that I am able to offer is that either the plants were described from dried material or else the description was drawn up from notes which conveyed exactly the opposite sense to that which they were intended to convey. The latter seems the more probable explanation, for it is certainly curious to find that an Iris is said to differ from I. graminea by its greenness. The green, polished leaves of I. graminea are one of its most noticeable features, while I. Urumovii is noticeably glaucous, especially in the lower part of the leaves. Moreover, Velenovsky appears to contradict himself by calling attention to the fact that the spathe-valves, and often the leaves also, are rough. This is true, but a plant that is so glaucous as to be actually rough to the touch can hardly be greener than I. graminea. As a matter of fact, it is this extremely glaucous character, the non-keeled spathes, the slender habit, and the fact that the leaves die right away in winter, that distinguish I. Urumovii from I. Sintenisii. From I. graminea the dried plant can be at once distinguished by the long, slender neck of the ovary. From I. Sintenisii it will be much more difficult to separate it in the dried state, unless it is possible to see whether the spathe valves have the sharp keel along their whole length which is characteristic of I. Sintenisii.

The stems are numerous, 6 to 10 inches in length, slightly overtopped at flowering time by the narrow, ribbed foliage, which eventually increases to about 18 inches in length by ½ inch in width. The spathes vary in length from 2½ to 4½ inches even on the same plant. They are rounded at the top, and so glaucous as to be rough to the touch. They are keeled only at the apex and entirely herbaceous. Each spathe contains one or more, usually two, flowers, set on pedicels an inch or more long. The short ovary has double ribs at the three corners and tapers into an inch-long slender neck, which expands into the short, broad tube.

The flowers closely resemble those of a small I. graminea. The haft of the falls, however, is narrow and almost linear, and passes with a very slight constriction in the small ovate blade. The haft is veined with pale purple on a greenish-white ground, and the blade with deep-blue purple on white. In the centre there are numbers of minute dots such as are usually found also in I. Sintenisii. The standards are short and narrow, of a uniform dark-red purple. The stigma is two-toothed, as are those of all members of the spuria group, and the pollen is orange—another characteristic of the group.

---

* *A Handbook of Tropical Gardening and Planting with Special Reference to Ceylon.* By H. F. MacMillan. Second edition. Published by H. W. Cave and Co. Colombo, 1914. Pp. 662. Illustrated. Price 7s. 6d.

Although I. Urumovii is by no means a showy plant, I have been surprised at the attention which this small, slender Iris has attracted among visitors to my garden this year. It is certainly floriferous, and the quiet colouring of the flowers harmonises with the glaucous grey of the foliage. *W. R. Dykes, Charterhouse, Godalming.*

NOTES FROM FRANCE.

THE LOUVRE ROOF-GARDEN.

Although a roof-garden is not an uncommon thing, one which includes fruit and vegetables, in addition to the usual shrubs and flowers, is a novelty. A garden of this description is to be found in Paris—located on the leaden roof of the Louvre.

Some sixty-five years ago the chief custodian of the Louvre leads pined for some means whereby he might utilise his leisure, and, at the same time, beautify the large expanse of flat roof in his charge. One fine day the *plombier en chef* was struck by the idea to convert the leads over the Colonnade into a roof-garden. "Figure to yourself," said he to a sympathetic friend, "the space is here, the blessed sun shines in abundance, and I have water to spare. Why, then, should I not construct a roof-garden which, besides being the joy and pride of our *belle France*, will become a monument to French industry for all time?" At first the scheme hung fire, the powers-that-be, from whom permission had to be obtained, objecting strongly to the innovation. Not, in fact, till yards of red tape had been expended upon the tying-up of a voluminous correspondence dealing with the subject and covering a lengthy period, did the guardian of the leads receive a favourable reply. But, even then, all sorts of restrictions were imposed upon him, and only when he had undertaken to refrain from laying down earth on the sanctified roof was the desired permission finally accorded.

Commencing in a small way, the amateur gardener first turned his attention to shrubs, planting them in tubs. Shrubs, however, afforded little scope, even though much success was obtained with flowering varieties, and the industrious plumber bethought himself of flowers. Some fifty, long, wide boxes were procured, and in them the proud owner of the garden reared Pelargoniums, Violets, Primroses, half a dozen different kinds of Carnations, Sweet Peas, Sunflowers, Tiger Lilies, and so forth. A number of Rose bushes also repaid the loving care bestowed upon them, while the Chrysanthemums, finding the vast depth of the boxes suitable to their particular needs, flourished exceedingly. Even the Cacti, imported from exotic Mediterranean shores, took root, thus adding to the interest of the "*joli jardin aérien tout riant*," as Georges Cain has so aptly described it in his delightful *Nouvelles Promenades dans Paris.*

An Orchard in the Air.

Having made the most of shrubs and flowers, the excellent plumber-gardener determined to embark upon a tiny orchard. So, ordering more boxes, he planted in them nursling fruit-trees, which, alas! at first refused to bloom. Indeed, not for some seasons could so much as a single modest bud be seen, and the *propriétaire* of the ungrateful trees was depressed beyond words. But one never-to-be-forgotten Sunday in spring the saddened plumber-in-chief woke to find the blossoms bursting through their coverings, and in due course the Cherries, Pears and Apples ripened, while for the past few years the orchard has done all that could be expected of it. Indeed, several kinds of eating and cooking Apples are grown upon the roof of the Louvre, each being an admirable specimen of its kind.

First the Apple, then the Vine. Experiments were made, and for some time the grower drained the cup of disappointment to its dregs. Eventually, however, he hit upon the right sort of Vine, and his table was laden with grapes cultivated on the premises. In moments of confidence the present *plombier en chef* (the original tiller of the soil has retired) admits that the fruit lacks flavour; but upon ordinary occasions honest pride reduces their acidity. Of late, attempts have been made to induce Peaches, Apricots, Greengages, Plums and Figs to grow, but with disappointing results.

After the roof-garden had been in existence for some years the plumber, prior to retiring from the official position which he had so long adorned, determined to hand down a kitchen-garden to the custodian appointed to succeed him. Having obtained permission from the authorities to extend the scope of his activities, he ordered more boxes, and, before many moons had waxed and waned, Black, Red and White Currants, Strawberries and even Raspberries, which usually require more fresh air than a roof-garden affords, greeted the aged gardener's enchanted gaze. Lettuces thrive there; Peas almost sprout for the mere asking; and a miniature Asparagus-bed has repaid the attention bestowed upon it. So succulent is the Louvre Asparagus that, at the time of his departure, the gardener-plumber petitioned the Government to allow him an additional roof-space in which to lay down a second Asparagus-bed—or, rather, box. But the flinty-hearted authorities declined to oblige their old servant —though they consoled him with a welcome pension. *George Cecil.*

MR. THOMAS H. MAWSON, HON. A.R.I.B.A.
(See p. 271.)

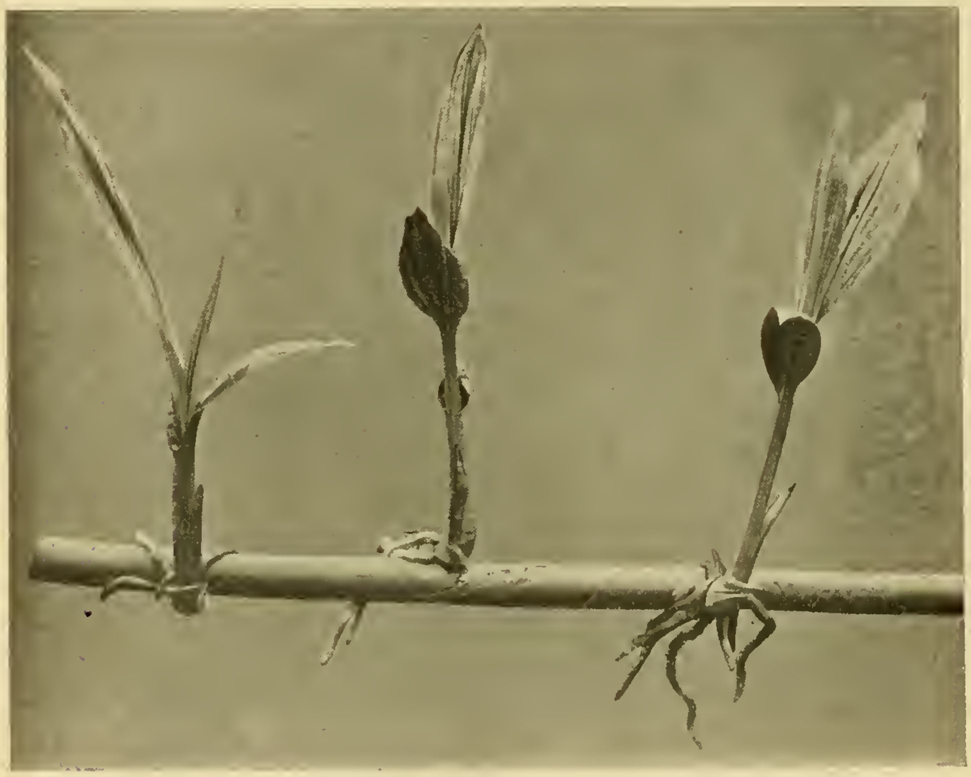
PHAIUS WALLICHII WITH ADVENTITIOUS GROWTHS.

When a plant is seen to produce growths from a part of its structure not usually associated with the production of shoots considerable interest is aroused, and the superficial observer is apt to treat the matter as one for wonderment. But in nature it is a common thing for plants to be provided with other than the ordinary means of continuing their existence, means that may not show themselves except in cases of injurious climatic conditions or other circumstances dangerous to the existence of the plant. These latent powers have the same object whether they be in the production of adventitious growths from the minute scales at the base of a bract on a flower-stem, as in the case illustrated; the formation of bulbils in the axils of the leaves or other parts of the plant, as in some of the Lilies, or on the root-stock of Amaryllids in arid districts in Africa, which are formed while the parent bulb is being slowly exhausted.

Indeed, in some plants in areas where prolonged drought is the rule rather than the exception progression by means of a well-developed arrangement of leafy scales distributed at the points and in reserve on the lower parts of the inflorescence is the primary means, the flowers produced being the secondary mode of propagation. A pointed instance of this is furnished by Chlorophytum comosum, of which Mr. J. Medley Wood, in *Natal Plants*, Vol. III., under plate 279, writes as follows:—"The plant is really proliferous, propagating itself very copiously by these 'tufts of linear leaves,' the weight of which bends the stem or branch to the ground, where they readily take root, and the plant bears seed very sparingly. The group of some dozens of plants from which the specimens were taken for drawing and description was observed for several weeks, but not a single capsule was found." If observation were made over a number of years it would probably be found that conditions which threaten to bring about failure of the growths on the inflorescence favour the production of seeds. The plant alluded to is probably a form of C. elatum, which in its green and variegated forms is common in gardens, and it and an allied species may often be seen suspended in cottagers' windows.

The uncommon example of adventitious growths on the flower-stem of Phaius Wallichii (see fig. 107) was produced at Kew under the potting bench, where the spike had been thrown some time previously. A precisely similar case in Kniphofia (Liliacea) was illustrated in the *Gardeners' Chronicle*, February 10, 1906, p. 81.

Growths which are in effect similar are not uncommon in Orchids. Cypripediums occasionally produce them from the apex of the inflorescence at the base of the bract of the ovary. Prolonged delay in the flowering of some Odontoglossums, especially O. cirrhosum, results in the bracts becoming foliaceous and occasionally in the production of adventitious growths. So also in Phalaenopsis, a very interesting example of which, a Phalaenopsis Luddemanniana (see fig. 107, *Gardeners' Chronicle*, April 28, 1906), produced a mature plant from an adventitious growth on the inflorescence of the parent plant, both being in flower at the same time. Growths of this kind from the apex of a pseudo-bulb which has lost its normal growth bud are not infrequent; the production of growths from the nodes of Dendrobium, from which flowers should come in the ordinary course, are common and annoying to gardeners, who often put up with the loss of the flowers year after year. They forget that what they deplore is caused by some error in management which induces growth and not flower, and that a longer, cooler and drier resting season before the buds were due to appear would prevent the abnormal development of these vegetative growths. In these means of securing the establishment and perpetuity of vegetation we can see how wonderfully Nature provides for its creatures and how automatically the subjects make use of them in time of need.



[*Photograph by E. J. Wallis.*

Fig. 107.—FLOWER-STEM OF PHAIUS WALLICHII WITH ADVENTITIOUS GROWTHS.

ASHTEAD PARK, SURREY.

The Surrey residence of Pantia Ralli, Esq., consists of a vast estate, of which an area covering about 150 acres is devoted to gardens and pleasure grounds. The house itself stands on an eminence, commanding very beautiful views over the park, in which there are numbers of fine trees—old Oaks, Chestnuts, and many other kinds. A large herd of deer roams over the grounds and makes picturesque groups in the shade of the trees. It is difficult to believe that so large and so beautiful an estate can be found at a distance of very few miles from the heart of London, but it is a fact that the city can be reached in less than an hour.

Mr. and Mrs. Ralli came here for the first time twenty-five years ago, on the day they were married. The estate belonged to Sir Thomas Lucas for about nine years, but for many years before it belonged to the Howard family, and is mentioned in Evelyn's Diary as belonging to the Howards.

A stretch of semi-cultivated woodland is known as the Wild Garden, in which Nature is allowed to take her own way. The conformation of the ground and the disposition of the trees are left in their original condition, but the ground beneath the trees has been planted with masses of bulbs cunningly disposed in the turf and along the winding, grassy glades, with a very beautiful result. Rare shrubs have also been carefully introduced, and Rambler Roses encircle some of the older trees, climbing over the trunks of the Oaks to a height of fifteen or twenty feet, illuminating the dark wood with their crimson blossoms and flinging their bright petals on to the mossy ground.

I had the pleasure of making a tour of the gardens with Mr. Ralli a short time ago, and of learning something of the principles on which they have been designed. It was recognised at the beginning that the considerable size of the estate and the large number and great height of the trees made it necessary to plant on a large scale, and to use masses of plants rather than single specimens. This plan has been followed almost without exception, only the rarer shrubs being planted here and there in ones and twos. Irises in their season are a blaze of colour; Lilies (especially L. Szovitzianum) grow rampantly in great patches; and annuals of all kinds provide the warmth and glow which is needed as a relief in any wide expanse of green. One little scene of great beauty is provided by a bank of blue-tipped Eryngium, flanked by bold masses of Phloxes, Leycesteria formosa and Fuchsia Riccartonii. At the foot of the bank dwarf Santolina incana blossoms freely, while Rambler Roses form the background. On one side of a grassy walk are large clumps of the white-wooded Rubus; on the other the double Rubus flourishes, in company with glossy tufts of Butcher's Broom. Spiraea Anthony Waterer provides a touch of bright colouring, and close by the purple Vine and a beautiful Clematis trail over an arch. In a little hollow a stretch of water reflects the full, rich green of the summer trees and the blue of the sky between the branches. It takes the colour of the sea-Buckthorn, grey-tinted, and mirrors the waving of the willows which lean towards its placid surface. On its banks the Iris luxuriates, and scarlet, bronze-leafed Dahlias glow with an almost blatant hue. Above the lake, in an opening through the trees, can be seen a bush of Eucryphia pinnatifolia, about fifteen feet high, covered with its white Camellia-like flowers, and a patch of Anchusa Opal, clear blue in colour. Wichuraiana Roses encircle the trees, beds of China Roses send out their intoxicating, incense-like scent, and Monarda didyma stands near a hedge of Sweet Briar, glowing with bright red colour, and mingling its scent with that of its neighbour. Halesia hispida flowers finely; Buddleia variabilis and B. Veitchiana are cut down every year, and have grown stout, bearing at the top of their sturdy stems a wealth of plumy pink blossoms. Patches of fragrant yellow Broom reflect the sunlight, and Carpentaria californica and many of the rarer shrubs give interest to a garden of much more than ordinary beauty.

From the Wild Garden we came to higher ground again by way of Rose-covered paths, past the Dutch Garden, bright with clean, clear flowers and well-trimmed shrubs, past the house of the head gardener and the bothies of the under-gardeners, newly-built and fitted with every comfort and convenience, to the kitchen and fruit gardens. Here are some interesting relics of past years. Several of the old "walks" have been preserved, bordered now with a profusion of beautiful herbaceous plants in wide beds. A very old Jargonelle Pear survives from ancient days; it has an immense trunk, and the branches are of proportionate size. It is thought to have been planted when the estate was first cultivated—probably a hundred and fifty years ago; yet it is by no means exhausted, and still bears its crop of fruit. It grows on the outside wall of the gardener's house. Nor is it the only link between ancient and modern gardening, for the orchard contains many trees of very advanced age, which bear extremely creditable crops. A good deal of fruit is grown under glass, and there is also a range of houses for the culture of decorative plants.

Increasing attention is given to the culture of Orchids, and several hothouses have recently been built for their accommodation. The raising of hybrids, perhaps the most fascinating branch of Orchid culture, has lately been developed at Ashtead, and there are now many crosses in various stages of growth. Some of the most advanced are Cattleya Düsseldorfei Undine × Schröderae alba; C. Brenda × C. Gaskelliana alba; C. Mossiae magnifica × C. Winteri; and several very promising crosses of Brasso-Cattleya, Brasso-Laelia, and Sophro-Laelia. Seed-capsules have been formed on fine specimens of Sophronitis grandiflora set with Laelio-Cattleyas and other varieties, the pollen of the Sophronitis having in most cases been used for reverse crosses. In one house there are some fine hybrid Cattleyas, Brasso-Cattleyas, and Laelio-Cattleyas approaching the flowering stage. A collection of Phalaenopsis is in vigorous condition, and in the same house are several interesting hybrids bearing very distinct traces of their parentage, viz., Cattleya O'Brieniana alba × Sophronitis grandiflora, S. grandiflora × Brasso-Cattleya Mrs. J. Leemann, Lycaste Skinneri × Maxillaria Sanderiana (three sturdy little plants), and Odontioda Charlesworthii × Miltonia Warscewiczii. In the range of intermediate houses for plants of flowering size is a good collection of selected plants, some of which are in bloom, including Cattleya Hildegarde, C. Warscewiczii Frau Mélanie Beyrodt, a fine specimen of C. Dietrichiana, C. Caduceus, C. Hardyana, Laelio-Cattleya Geo. Woodhams, and others. In the cool-house range is a good selection of the best Odontoglossums and Odontiodas, their growth and flowering both excellent. There are several good specimens of Odontoglossum crispum; an O. Elaine, with a fine spike of blossom; an excellent O. Pescatorei; a richly-coloured Odontioda Brewii; and several rare species and varieties. The collection of Miltonia vexillaria includes some of the best varieties. In the Melon house the shelves are occupied by a superb collection of Calanthes, with very large bulbs.

Enough has been said to make it evident that the efforts of the head gardener, Mr. Hunt, and the Orchid-grower, Mr. Farnes, have been attended with success. Mr. Hunt has occupied his position for twenty-five years. *J. O'B.*

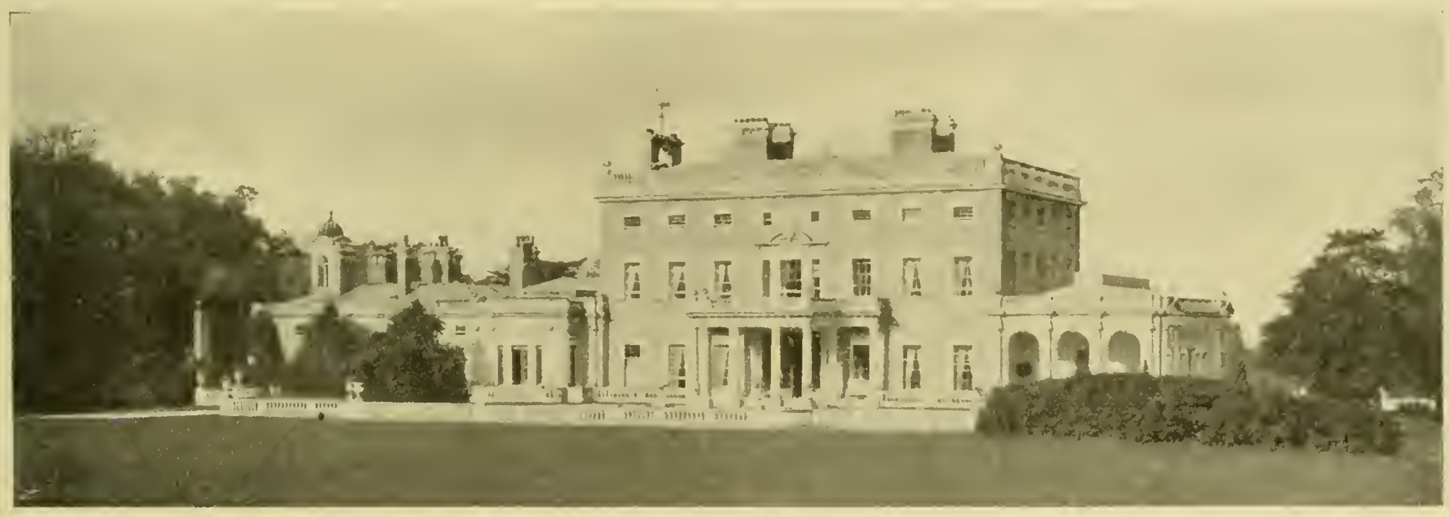


Fig. 108.—Ashtead Park, Surrey, the residence of Pantia Ralli, Esq.

FRUIT REGISTER.

APPLE NORFOLK BEAUTY.

My experience proves that Norfolk Beauty Apple is not grown so commonly as its merits deserve. For culinary purposes it is not excelled by any Apple of its season, October.

The fruits (see fig. 105) are large, with smooth, yellow skin, almost the shade of Golden Noble, but marked with a few traces of russet and a very occasional splash of colour on the side next the sun. So far it has never been attacked by scab or canker, and the fruit is generally of even size, there being no "scrumps." For the first two or three seasons after planting the young trees I was somewhat disappointed at the meagre crops, but now that the requirements of this variety are better understood I have much confidence in the cropping qualities, trees of all types having given crops of excellent fruit this year.

Being vigorous in growth, a system of close pruning does not suit it; the tree needs freedom of range. In standard form, I think it will be exceedingly productive. I have several specimens with 7-feet stems and these trees have borne abundantly. At that height the trees can make extended growth; the branches are of a semi-weeping character, and with the weight of fruit on them they are brought more into shape and subjection.

As an espalier with a long range, this Apple should succeed perfectly. Summer pruning, I find, answers well with this variety, and is to be recommended as a means of decreasing the cutting necessary in winter. Mr. W. Allan, Gunton, Norfolk, told me that he believed it to be the result of a cross between Warner's King and Waltham Abbey Seedling. Certainly it possesses some of the characteristics of these varieties. The variety was awarded the R.H.S. First-class Certificate when exhibited by Mr. Allan on December 9, 1902. *E. Molyneux, Swanmore Park, Hants.*

A NEW STRAWBERRY.

The issue of *Le Jardin* of August 5 describes a promising new Strawberry, to which has been accorded a Gold Medal by the Nantes Horticultural Society. The new Strawberry Mme. Henri Leduc, the result of a cross between Monseigneur Fournier and Noble, has large, almost round, deep-red fruits, borne in groups on long and strong peduncles; foliage deep green, habit spreading, sturdy and stiff; leaves strong with fairly short petioles. The novelty, of the value of which our contemporary speaks highly, was raised by M. Leduc at Martelières from seed raised in 1886.

LILIUM WALLICHIANUM.

This beautiful Lily has flowered at various times in England and is well figured in *Botanical Magazine*, fig. 4,561, and in my monograph, but the origin of all these plants, so far as I know, is Kumaon, in the North-west Himalaya. Wallich's original plant was collected in Nepal, near Khatmandu, whence I have not seen any living plants. When in Sikkim last March with Mr. A. Trevor Battye, we saw in gardens at Gangtok a Lily which was unknown to Sir J. Hooker when the sixth volume of the *Flora of British India* was published in 1894, and judging from a beautiful photograph in Mr. Claude White's book, *Sikkim and Bhutan*, it is a finer and more floriferous plant in Sikkim than in the North-west Himalaya or Nepal, some of the stems in Mr. White's garden being over 6 feet high with four or five flowers on a single stem, and, as he says, filling the air with delicious perfume. Dr. Turner, the medical officer at Gangtok, told me that the plant was found near Singtam, now called Singjik, which is two marches from Gangtok up the Tista Valley, and here we collected some bulbs close to the road, near the twenty-third milestone from Gangtok, on a steep slope facing south and west, covered with long coarse grass, Fern and brushwood, at about 4,500 feet elevation, the soil being mica-schist. Some of the withered stems were 7 feet high, but most of the bulbs were small and difficult to find at this season when they are quite dormant.

I sent these bulbs home, and, as they did not correspond with the bulbs from the North-west Himalaya, which have a scarious edge to the scales, I was in hopes of having a new variety. But now one of them has just flowered and agrees precisely in all respects with the figure in the *Botanical Magazine*, which shows the green and yellow colour of the tube outside, and the cream colour within, better than the plate in my monograph, which is a purer white.

In the *Botanical Magazine* a root very unlike the true bulb is figured, copied from the plate in Wallich's *Tentamen*, which I do not believe belongs to this plant, nor to any Lily, though Dr. Wallich said: "The base of the stem I have repeatedly found horizontal, creeping and scaly, like that of a Fern without any remainder of a bulb, but marked with a number of vestiges of old stems." No such root was found at the base of any of the stems I dug up, which came straight from the bulb as figured in my monograph, and I am forced to suppose that the plants found by Dr. Wallich were growing among the rhizomes of Ferns and mixed up with them. As regards cultivation, I can only repeat what I said thirty-five years ago of this Lily—namely, that though Mr. Niven told the late Dr. Wallace that he had flowered it regularly for sixteen years in the open air at Hull, I do not believe it will be possible to grow it successfully out-of-doors in most parts of England. In its own country it is at rest in a comparatively dry climate from December till May, and does not start into growth until about June, when it grows very fast in a tropical climate. My bulbs were all potted and kept in a frame till they showed growth in June, when I brought the pots into a sunny greenhouse.

There is another Lily in Sikkim, which has been sent to Messrs. Barr by Mr. Cave, who was good enough to give me some bulbs, which have not yet flowered. This is believed to be L. nepalense, which has not yet been recorded from Sikkim, all the plants hitherto in cultivation coming, I believe, from Upper Burmah, whence the plant figured in *Botanical Magazine*, tab. 7,043, was imported by Messrs. Low, though the locality is not mentioned. *H. J. Elwes, Colesborne.*

The Week's Work.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Calceolaria.—Plants of the earliest batch of Calceolarias are ready for shifting into 4-inch pots. The compost may consist of two parts sandy loam, one part leaf-mould, one part manure from a spent Mushroom bed, and sufficient sand to keep the soil porous. The plants should be removed from cold frames and wintered on dry shelves in well ventilated plant houses. Water the roots sparingly, and spray the plants overhead only on clear, bright days. Later, plants may be lifted from the boxes by means of a stout label, and potted into 2½-inch pots, taking care not to break the young leaves. Aphis is a troublesome pest, attacking the under-sides of the leaves, and must be destroyed by light fumigations.

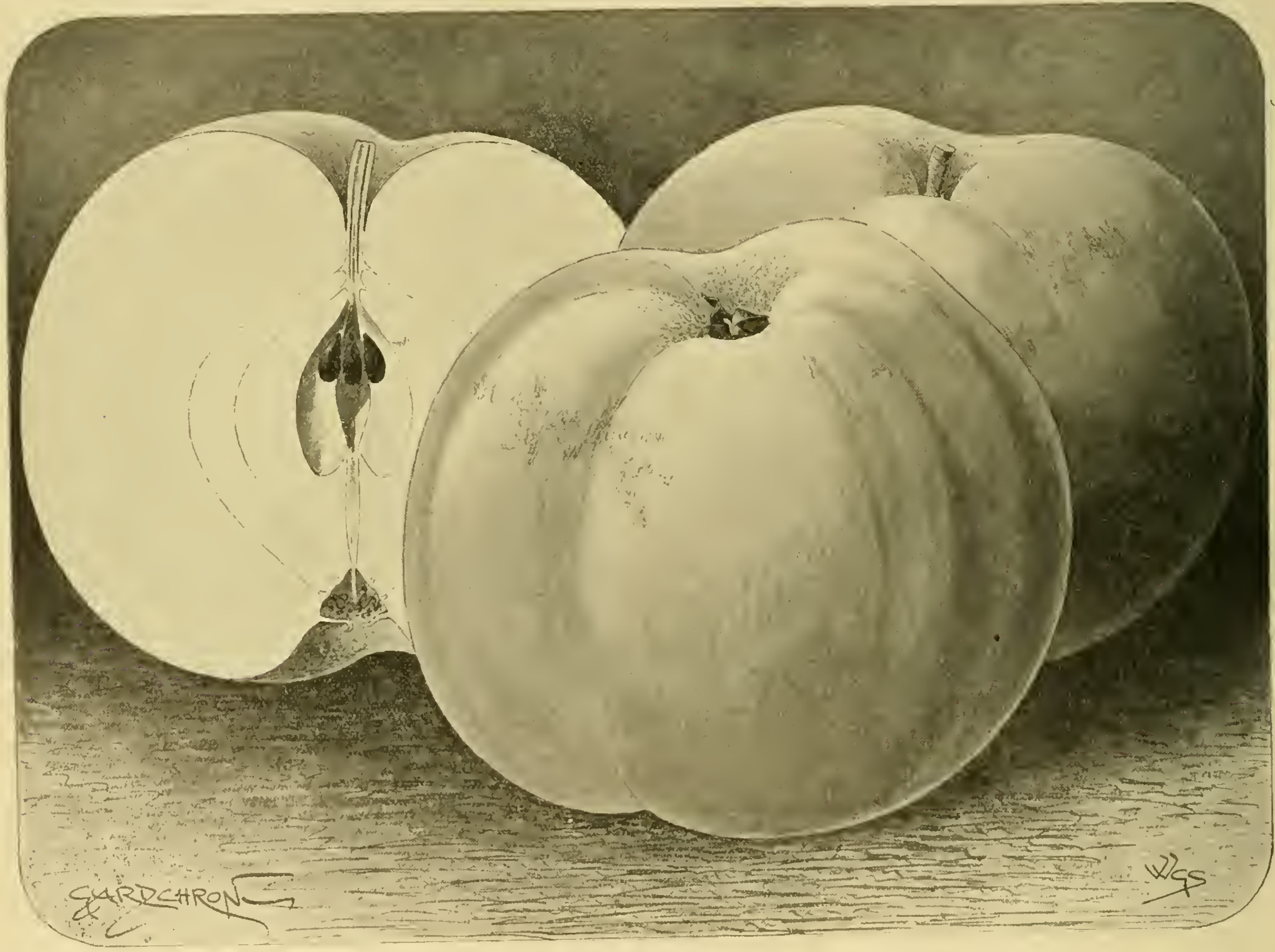


Fig. 109.—Apple Norfolk Beauty.

Hippeastrum.—The bulbs are completing their growth, therefore the pots may be stored in any dry place, such as under greenhouse staging or on shelves in a vinery or Peach house. Withhold water until the time for forcing arrives.

Humea elegans.—Young plants that have filled 2½in. pots may be shifted into receptacles 4in. in diameter. Water the roots with the utmost care, and only when moisture is absolutely necessary. Both young plants and those now in flower should have an atmospheric temperature of 50°.

Euphorbia.—Plants of Euphorbia pulcherrima, known more commonly in gardens as Poinsettia pulcherrima, should be removed from pits to a house. The temperature need not be higher than that of the frame for a week or two, but it should be increased gradually as the bracts begin to form. Syringe the plants in the early part of the day and water them with great care. They should be fed twice weekly with weak liquid manure.

Souvenir de la Malmaison Carnations.—Water the roots of these plants with extra care, and only when moisture is absolutely necessary. Open the ventilators wide during the day, and admit sufficient air at night to maintain the temperature at 45° to 50°. Fire-heat should only be employed in times of severe frost, for so long as the plants are kept dry they are not harmed by a degree or two of frost. Young layers potted recently may be removed to a staging close to the roof-glass. Guard against aphis infesting the points of the leaves, or the plants will soon be disfigured.

Tree Carnations.—The plants should be housed by this date. The flower-spikes are developing fast, and the work of staking and tying them must receive constant attention. Allow the plants plenty of room, and grow them in a temperature of 50° to 55° at night. Admit air in fine weather, but close the ventilators on very foggy nights. Early-rooted plants are flowering freely, and may be fed sparingly; a little blood manure may be sprinkled on the surface of the pot occasionally as a change from other fertilisers. Light fumigations at intervals of a month will keep the plants clear of insect pests. Our best one-year-old plants in flower are of the varieties Triumph, Baroness de Brienen, Carola, Enchantress, Lady Alington, White Wonder, Electra, and May Day.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Wiring Walls for Fruit Trees.—The wiring of walls, where fruit trees are growing, is advisable. The process of training trees to walls by means of nails and shreds is at best a slow process, and when it has been pursued for a number of years, the walls are so battered by constant nailing that it is necessary at frequent intervals to fill up the holes with cement. A tree can be trained to the wires in less than a third of the time required to nail it, and wires once fixed will last for many years. The trees can be cut from the wires, pruned, cleaned, and re-tied with ease, and in a much shorter time than that demanded by the nail and shred method. Should there be any fear that the wire will damage the fruit (though this seldom occurs), the difficulty may be met by giving the wire a coat of paint. This is recommended in any case as a means of preserving the wires from the effects of the weather. Raidisseurs, eyes and holdfasts can be procured at a very moderate cost, and the wiring may be done by any intelligent workman. The distance necessary between the wires will depend on the class of tree to be trained. As a general rule, six inches is a suitable space for Peaches, Cherries, and Plums.

Root-pruning.—The object of root-pruning is to make unfruitful trees fruitful by shortening the tap-root, and all other strong roots growing out of bounds, and thereby causing the tree to form numbers of small fibrous roots. If root-pruning is done in the autumn, the roots will have time to recover somewhat from the check before the winter, the ground being still warm. In the ordinary course, a healthy tree that has been root-pruned will bear a good crop the second season following the operation. Young fruit trees are apt to grow too vigorously for the first few years at the expense of cropping, and in their case the better plan is to lift them entirely out of the ground, trim the roots carefully, and replant them. The work of root-pruning older trees should be done as follows:—Take out a trench all round the tree at some distance from the stem and sever all strong roots growing horizontally, and those growing downwards. Excavate the soil from under the centre of the tree. in order to cut the tap-root, and any others that may need severing. The roots on one side of the tree should be attended to at one time, and the soil replaced before disturbing the other side. In this way the tree will retain its original position. Work the soil carefully amongst the roots, which should be spread out evenly, and sever with a clean cut any that are damaged. Make the soil firm as the work proceeds. The work should be done when the ground is not over wet nor very dry, but if the soil is found to be dry, water it copiously when the work is finished. Trees that have been disturbed at the roots either by lifting or root-pruning should be staked at once. Do not mix animal manures with the soil when root-pruning, a light dressing of dung on the surface being all that is required. In some instances a quantity of rich, dry loam mixed with wood ash may be sprinkled amongst the roots, and in the case of all stone fruits, lime or mortar rubble in addition. Make the soil thoroughly firm, for the trees growing in loose, rich soil are very apt to make gross and unfruitful shoots. In the case of old trees the work of root-pruning should be extended over two seasons, for if all the large roots were severed at one time the tree would receive too severe a check, and, if the following summer proved hot and dry, be permanently injured.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

The Orchard House.—The fruit having been gathered there will be but little work to do in the orchard house beyond seeing that the conditions are such as favour the maturation of the wood, which is of the utmost importance. The shoots of fruit trees cannot be too well ripened, and conditions which favour ripening are plenty of light, an abundance of fresh air, and a dry, warm atmosphere. Remove all useless shoots. In fine weather during autumn it is a good plan to place pot fruit trees out-of-doors, as the wood will then harden. When this cannot be done admit an abundance of air both by day and night in fine weather. Keep the atmosphere dry at all times and water the roots only when moisture is absolutely necessary. During cold, damp weather use a little fire-heat in conjunction with a proper amount of ventilation. In short, maintain a dry, bracing atmosphere with full exposure of the trees to the sun. Potting may be commenced shortly, starting with the more forward trees. Prepare the soil in advance, employing rich, turfy loam three parts and well-decayed manure one part—preferably old cow manure—with a sprinkling of crushed bones and wood ashes.

Peaches.—Most of the leaves on trees in the earliest house have ripened or fallen, and it is satisfactory to note that the plants generally are in a good condition, with wood well matured. Pot trees especially have made short-jointed firm shoots, and the trees will require but little pruning. Admit an abundance of air for several weeks to come, for nothing will be gained by unduly exciting the trees into early activity, but, on the contrary, bud-dropping may result by such treatment, quite as much as if the soil about the roots is allowed to become too dry or exhausted. Exercise the greatest care in the selection of the insecticide used for cleansing or washing the trees, otherwise serious injury may be done to the dormant buds. Unless the trees are infested with mealy bug, the following composition will be found safe and effectual:—

To eight gallons of water add one pound of soft soap, two pounds of flowers of sulphur, and two ounces of common shag tobacco. Dissolve the soft soap in about two gallons of the water, boil the sulphur and tobacco for about half an hour in a similar quantity of water, then mix thoroughly, and add the remainder of the water. The trees should be examined carefully for the presence of mealy bug, and the infested parts treated carefully with methylated spirits, or pure spirits of wine. With a soft brush or sash tool thoroughly work the spirit into the crevices and rough bark of the stem, also the main branches of the tree. Examine the soil near the stem, for the insect feeds upon the roots in winter, issuing forth again in the spring, and increasing with great rapidity.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Late Peas.—A severe frost will destroy the plants in one night, therefore when it is evident that the night will be frosty, all the pods fit for picking should be gathered in the same afternoon. They will keep good for a considerable time if spread out in the fruit-room or other cool structure. A sowing of an early variety for standing over the winter may now be made. The young haulm may be used as a green vegetable, for which reason a good breadth may be sown. For this purpose the rows should be formed fairly closely together, and a common cheap variety selected. The seed should be sown much closer than for cropping.

Seed Harvesting.—It is advisable to secure home-saved seeds before the season is far advanced. Onions and Leeks, for instance, are apt to sprout after this date, though apparently not mature; but if the seed-heads are cut with moderately long stems and suspended in a dry room or glass structure the seeds will ripen perfectly. The seed-heads of Celery and Parsley should be cut and laid on newspapers. Late Peas are apt to become mildewed if left too long. The seeds will ripen in a little warmth even though they be green when packed. Leeks for seeding may be selected now; the plants should be lifted from among the others and transplanted in a warm part of the garden. Selected Parsley plants should also be transplanted previous to winter.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Housing of Half-hardy Plants.—It is not safe to leave any tender subjects out-of-doors after this date. Specimen plants in pots or tubs of Hydrangeas, Fuchsias, Abutilons, Agapanthus, Plumbago, Veronica, Francoas, Myrtles, and similar plants may be placed in a deep pit on which the lights need only be used during frosty nights. Decrease the quantity of water applied to the roots and keep the plants well exposed to the light. If these conditions are maintained a few degrees of frost at a later date will prove harmless; in fact, the cold will have a contrary effect in ridding the plants of certain pests. No re-potting should be undertaken until growth is about to commence next spring.

Tulips.—For naturalising in the grass the planting of Tulips should now be completed as soon as possible, or the flowers will lack their proper length of stem. The double-flowered varieties, such as Murillo, Duke of York, rubra maxima, Rose blanche, Gloria Solis, and La Candeur, last a longer time in flower in the grass than single varieties. The best of the single varieties for naturalising are Keizer Kroon, Duchesse de Parme, Golden Crown, Rosamund, and Bouton d'Or. Darwin and May-flowering Tulips should be given more generous cultivation than is needed by most other Tulips. They should be planted in well-prepared beds, that were manured a full year ago, as they do not like fresh manure. It is not desirable to use peat moss manure for any sort of bulb, as it favours the spread of a species of mite which is destructive to the bulb.

Daffodils.—Large Trumpet Daffodils, and others of the type remarkable for the large chalice or cup, are wonderfully effective in grass when planted in irregular blocks of one variety. The following varieties are amongst the cheapest and best for the purpose:—Horsfieldii, Emperor, Empress, Victoria and Sir Watkin. There is a danger in planting bulbs of getting them too formally in lines, squares, or circles. Every effort should be made to ensure that the groups will appear as natural as possible.

Miscellaneous Bulbs.—Spring-flowering Crocuses, Anemones, Muscari, Erythroniums, Fritillarias, Scillas, Chionodoxas, and other Dutch bulbs should all be got into the ground as quickly as possible, whether they are being planted in grass, in beds, or in borders. If planted in grass, such positions as a sloping bank, immediately under the outer branches of a tree, or, indeed, any position where the grass does not grow too coarsely for the bulbs to show themselves off to good advantage, may be chosen. In our heavy soil we find it desirable to make holes about nine inches square in the turf, and six or eight inches deep. We loosen the soil at the base of the hole with a hand fork, and fill it with old potting soil and charred refuse, in order that the bulbs may get an easy start. Four bulbs are usually placed in each hole. If a little bone-meal be applied to the surface of the soil this will work down and feed the roots year after year, and spring dressings with common soot are of great advantage.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Cattleya.—It seems but a few years since C. aurea, C. Bowringiana, and C. labiata were the only species available to furnish the Cattleya house with a succession of flowering plants during the closing months of the year, but, thanks to the hybridist, there are now plenty of beautiful Cattleyas that flower in the dull season. The hybrids and secondary hybrids raised from C. aurea alone are too numerous for me to enumerate. The plants are most valuable in gardens for decorative purposes, and there is nothing more serviceable or that gives a better decorative effect than flowers of the Cattleya and its allied genera. Moreover, they last fresh much longer in winter than in the warm months of the year. But it is not an easy matter at this season to keep the flowers free from disfigurement by damping. Where the plants are grown in houses with other Orchids, they cannot receive a special treatment, and the best plan is to place them together at one end of the house and keep the atmosphere as free from moisture as possible, more especially at night. In some establishments special show houses or corridors are provided for displaying flowering plants, thus minimising the difficulties and also enabling the grower to display the plants to the greatest advantage. Plants that pass out of flower may be repotted should they require attention. Such as are newly potted must be watered with extra care, as only sufficient moisture to keep the pseudo-bulbs plump is necessary.

General Remarks.—The root-glass should be cleared of the materials used for shading, and the glass washed thoroughly clean, for the plants will need all the light. Towards the end of the present month the night temperatures should be reduced gradually until the normal winter temperatures are as follows:—The stove or East Indian house, 65° to 70°; Cattleya house, 63° to 68°; intermediate house, 60°; Cypripedium house, 65°; cool Odontoglossum house, 53° to 55°. The thermometer may be permitted to raise 5° to 10° during the day time, with sun heat. In houses in which the plants have practically completed their growth, the roof ventilators should be opened whenever the conditions are favourable, using those on the leeward side, to minimise danger from cold draughts. The majority of plants in the Odontoglossum house are in their most active condition of growth. When the weather is very cold, causing a corresponding reduction of the warmth of the houses, it is advisable to keep the atmosphere drier than usual, for plants are not so liable to injury from cold when the conditions are dry. I would again draw attention to the need for discontinuing damping the floors, stages, etc., of the various houses until the temperatures of the respective departments are normal for the season.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS**, 41, Wellington Street, Covent Garden, London. *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENT FOR THE ENSUING WEEK.

MONDAY, OCTOBER 26—
Nat. Chrys. Soc. meeting at Essex Hall, Strand, at 4.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 47.4°.

Actual Temperatures:—
London, *Wednesday*, October 21 (6 p.m.): 53°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, October 22 (10 a.m.): Bar. 29.2; Temp. 55°. Weather—Overcast.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY,
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—
Rose Trees, Dutch Bulbs, Shrubs, etc., at Stevens's Rooms, King Street, Covent Garden, at 12.30 p.m.

TUESDAY—
Clearance sale of 4,800 Winter-flowering Begonias, Azaleas, Carnations, etc., by order of Messrs. J. Veitch and Sons, Ltd., by Protberoe and Morris, at 12.

WEDNESDAY—
Trade sale of Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 3.

THURSDAY—
Roses, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 1.
Fortieth annual sale of Coniferae, etc., at Hollamby's Nurseries, Groombridge, near Tunbridge Wells, by Protberoe and Morris, at 11.30.

Lamarck and the Inheritance of Acquired Characters.

Posterity is often regarded as a court of appeal, the decisions of which are clear and final. It is held to be the touchstone whereby golden genius is distinguished with sureness from imitations which beguiled the judgment of contemporary men. Yet surely to hold this opinion is to flatter posterity too servilely. There are many men long dead of whose genius the world has failed to come to a decisive opinion, and such an one is Lamarck, whose name is associated indissolubly with the doctrine of the inheritance of acquired characters. Of Lamarck some modern biologists would affirm that he is the true father of Evolution; others would dismiss his claims to immortality. The one group would base the evolutionary process on the Lamarckian factor—the inheritance of acquired characters; the other might observe in the hope of dismissing these claims that "heresies perish not with their authors; but like the river Arethusa, though they lose their current in one place, they rise up again in another."

It is sure that this controversy between the Neo-Lamarckians and Neo-Darwinians will continue yet for many a day, and that the claims of Lamarck to greatness will be treated like a pawn in the controversial game. Yet this is far from fair to the memory of a great man, and if anything may help to remedy this unfairness—at all events among English-speaking peoples—it is the publication by Mr. Hugh Elliot of a translation of Lamarck's famous treatise—the *Philosophie Zoologique*.*

For, as Mr. Elliot observes, though few names have been so extensively quoted in modern biological controversies as that of Lamarck, yet of those who quote him scarcely any have taken the trouble to read his work. Wherefore, by reading this admirable translation partisans of either camp, Neo-Lamarckians and Neo-Darwinians, may at least agree in this, that Lamarck—the storm-centre of their controversies—was indeed a great man. His theory must yet abide the question, but the man himself is free to join the company of the elect.

No one who studies Mr. Elliot's judicial but severe dissection of Lamarck's work will be disposed henceforth to dispute this claim, for Lamarck, whose *Zoological Philosophy* was published exactly half a century before the *Origin of Species*, was the first to launch a reasoned attack on the then current doctrine of special creation and to offer in place of it the theory of the mutability of species.

Nor is this by any means Lamarck's only claim to lasting distinction. In the domain of Zoology he distinguished for the first time vertebrates from invertebrates; he sorted out the things previously known as worms into "molluscs, worms, echinoderms, and polyps," separated the crustacea from the insects, and yet more remarkable, showed that the arachnids also are a class apart from insects.

With these and other large achievements to his credit Lamarck need not rest his claim to greatness on his hypothesis of the methods of evolution. This hypothesis teaches that evolution is due to the co-operation of two factors. The first and more fundamental is "the innate tendency to evolve towards increasing complexity of structure"; the second factor is the inheritance of acquired characters. He taught that, even though environment did not impress any modification on an organism, evolution of that organism would nevertheless continue. In that case it would pursue a more even and regular course under the sole and initial impulse implanted in the primitive organisms at the moment of their origin by "spontaneous generation." In practice, however, the second factor supervenes. Organisms acquire modifications as the result of environmental influences. These acquisitions arise in two ways. First, modifications are produced as a consequence of the direct action of the environment. Second, they are produced as the result of a greater or lesser use of organs. These latter Lamarck speaks of as functionally-produced modifications, and their inheritance may be described as "use inheritance."

The latter and not the former modifications exercise an effect on evolution. No reference to this part of Lamarck's thesis may omit the classic illustration of the giraffe. This animal lives in barren countries, where the only available food is leaves of trees. By constantly stretching to reach the leaves giraffes acquire their long necks.

It is over such examples as this that the critics of Lamarck have been apt to make merry—so merry, indeed, that without necessarily subscribing to Lamarck's doctrine we may remind them that "a good cause needs not be patronised by a passion, but can sustain itself upon a temperate dispute."

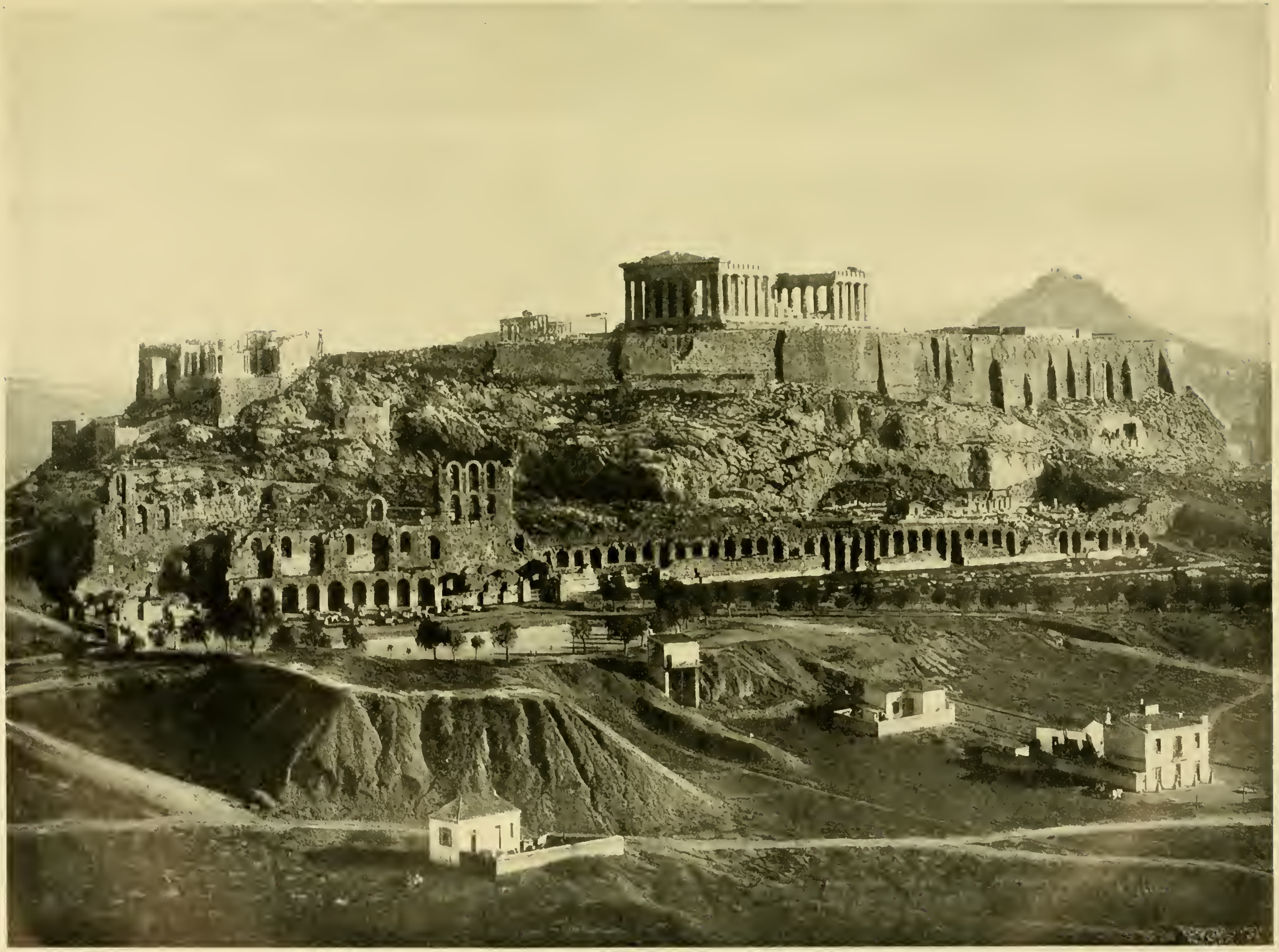
Over the bodies of the exponents of rival theories of evolution noisy battles have been waged. The front of these battles stretches through nearly a century of time, and the entrenched combatants bombard one another's positions with wordy howitzers of the heaviest calibre. It may be that when the engagement is at an end the rival hypotheses for the sanctity of which the battle was joined will be found themselves to be exploded. In this place, however, we are not now concerned with these rivals and their fate, but with the status of Lamarck. It cannot be gainsaid that Mr. Elliot's labours have been well bestowed, and that their severe and frigid fairness contrive for us a picture of a man, often mistaken and often astray in his facts and fancies, yet nevertheless one who had within him sparks of that immortal fire which when it warms our hearts we call by the name of genius.

Of the man himself we know that his career, like his fame, was chequered. A noble whose life ran through the troubled times of the Revolution, an eleventh and youngest son, he was destined for the Church, but chose the profession of arms. After service in the Seven Years' War, which gained for him a commission and a pension of £16 a year, he took up his lodging in a garret in Paris, was clerk in a bank, studied medicine for four years, became through his love of botany a companion of Jean Jacques Rousseau, and entered on a course of botanical study lasting ten years and resulting in the publication of his *Flore Française*. Thus at the age of thirty-five, in 1779, he became famous and secured election to the Academy of Science. He travelled widely during the next two years, visiting botanic gardens and museums, and on his return to Paris was appointed keeper of the Herbarium at the Jardin du Roi—passing rich on £40 a year.

A sagacious man if, as is said, he instigated the change of name from Jardin du Roi to Jardin des Plantes, Lamarck, luckier than some savants of whom the Republic had no need, survived the political cataclysm and filled with distinction one of the two chairs of Zoology in the Muséum d'Histoire Naturelle. Lamarck's section of the animal kingdom consisted in the "inferior animals," that is, created things other than mammals, birds, reptiles, and fish. Though his salary was improved Lamarck had no gift for economies or carefulness. He married four times, had seven children, and passed his old age in straitened circumstances. A controversial man of widespread interests, attacking the new chemistry of Lavoisier, and writing copiously on meteorology, Lamarck became blind at the age of seventy-five, and died, as we fear, a melancholy and disappointed man in 1829; for a new star—Cuvier—had arisen in the firmament of biology, and Cuvier would

---

* *Zoological Philosophy*, an Exposition with regard to the Natural History of Animals, etc., by J. B. Lamarck. Translated with an Introduction by Hugh Elliot. (Macmillan and Co., 1914. Price 15s. net.)



Citadel of Athens—The Acropolis. The Hillsides are to be Planted with Pines and Olives.

(See article on Athens in present issue.)

Printed by Love & Malcomson, Ltd., London, W.C.

have none of Lamarck's hypotheses concerning mutability of species. Thus the vicissitudes which pursued him during his life were omens of those which yet make sport with his name. Nevertheless, though it may grow dim the name of Lamarck will never fade outright from the book of the mighty dead.

Sir Harry Veitch.—The George Robert White Medal of the Massachusetts Horticultural Society has been awarded to Sir Harry Veitch in recognition of his distinguished services to horticulture.

Flowers in Season.—Mr. A. C. Bartholomew, Park House, Reading, sent us a fortnight ago specimens of Silene chloraefolia and Convolvulus sabatius, with the following particulars :—Silene chloraefolia has large white flowers which turn reddish as they fade. They are produced in a terminal panicle. The calyx is long and the striped petals are cloven halfway down, with a two-lobed crest. The plant flowers from July to September, and sometimes even to December. The leaves are elliptical, pointed and glaucous; the upper ones rather cordate. The stem is branched and grows 1 to 2 feet high. The species was discovered by Tournefort in Armenia and plants were introduced into this country in 1796. The plant is described in the *Botanical Register* as possessing every merit a hardy plant can have; it is perfectly hardy in a dry soil and seedlings come up pretty freely. Convolvulus sabatius bears a superficial resemblance to C. mauritanicus, but here in this particular year there is no comparison. C. sabatius has far larger flowers and more of them; the foliage is finer, and whereas C. mauritanicus is over and has ripened its seeds, C. sabatius is as beautiful and as full of flower as it has been ever since the beginning of July. The spray of C. sabatius enclosed will show its beauty and vigour. I also enclose leaves and a flowering stem with seed on it of C. mauritanicus. My plant of this species is grown in pots and may be somewhat starved, but others in the open have not attained to the proportions of C. sabatius. The plant, however, unfortunately sets no seed. Is it a hybrid and not a true species?

Pear Glout Morceau.—Frequent inquiries have been made respecting the meaning of the word *glout,* now generally adopted as part of the name of this Pear. Van Mons, *Arbres Fruitiers,* p. 373, not then aware of the identity, describes the Beurré d'Hardenpont as scarcely distinguishable from the Glout Morceau. In quoting this, Dr. Diel incidentally remarks: "This Frassbissen" (Glout Morceau) "is, however, unknown to me." Instead of this and similar meanings having reference to gourmand, the most appropriate explanation may probably be found in the sense in which the synonym, Goulu Morceau, is occasionally employed; thus Pois goulu, according to Chambaud, signifies sugar-peas, honey-peas; the Pear in question may be accordingly termed a sugared or honeyed morsel. This epithet corresponds with the quality of the fruit. Should a different meaning, however, attach to the word in Belgium, where the Pear in question and its name originated, information respecting such will probably be supplied through the kindness of some correspondent. The syn. Goulu Morceau was recently observed in the catalogue of M. Henrard, of Liége. The Glout Morceau was raised by Councillor Hardenpont, at Mons. It varies much in form; sometimes it is, on standards, roundish, but occasionally, on walls, instead of obovate, it elongates considerably towards the eye, with an obtusely angular, or somewhat square appearance, and altogether not unlike the form of a Portugal Quince. The flesh is white, exceedingly smooth and buttery, rich and sugary, not the least acidity being detected in its flavour. The seeds appear more perfect than in most fine varieties, and, this being the case, they deserve the attention of those engaged in raising seedlings. In some seasons and situations it becomes fit for use in November, in others not till January; but December is its most usual period. The fruit hangs late on the tree, and, in the southern counties at least, is best flavoured from standards. The tree is an abundant bearer, hardy, not disposed to canker. The shoots are dark olive, with prominent, diverging buds. Leaves ovate-oblong, crenated, or, near the extremity of the shoots, serrated, bright green; they may be distinguished by the wavy appearance of the margins. It ought to be in every collection; in various situations, in the open ground; on an espalier it succeeds well; and it highly deserves a south wall. *Gardeners' Chronicle,* October 26, 1844.

War Items.—A letter written by Monsieur le Comte d'Estienne to Mr. Arthur Sutton gives the interesting information that Monsieur Philippe de Vilmorin has received the appointment of interpreter attached to the staff of the Indian army now serving in France. Monsieur de Vilmorin joined the Indian contingent at Marseilles on October 6. His many friends in this country will recognise how admirably his linguistic attainments and personal qualities fit him for this important office, and will admire the devotion with which he has sought a post which, as experience has proved, is one of peculiar danger. Of this family of distinguished French horticulturists the following sons of Madame Henri de Vilmorin hold commissions and are on active service :—Jean (9th Cuirassiers), Vincent (18th Chausseurs), Louis (exchanged his naval rank for an equivalent rank as officer of an automobile mitrailleuse), and Marc (Versailles Territorials). Monsieur Maurice is with the army at Les Barres, and his son Jacques, who was also in the lines at Les Barres, has been invalided. All horticulturists will join in wishing success and safety to these brave members of the great French firm.

—— Despite the war, the editorial staff of the well-known French journal, *Le Jardin,* has managed, with what difficulty we may well guess, to issue a number bearing the date of August 20. The issue, which consists of one double sheet, records the fact that the director and his chief collaborators are on active service. The notes, which make always such an interesting feature of *Le Jardin,* record, among other items, the success of an experiment in sending refrigerated Strawberries from France to Berlin. Needless to say, the experiment was undertaken before the outbreak of war. The editor does not hold out any hopes that he will be able to continue the issue of *Le Jardin* whilst hostilities are in progress.

—— We are informed by Mr. William Todd, President of the Edinburgh and Leith Fruit and Flower Trade Association, that the members of his association have subscribed £105 in aid of the Belgian Relief Fund.

—— Among those prominent in the world of horticulture who have to mourn the loss of relatives killed in defence of their country are Lord Grenfell, who has lost his nephew; Lord Balfour of Burleigh, whose son, the Hon. Robert, is reported missing; the Rt. Hon. Lieutenant-Colonel Mark Lockwood, M.P., whose nephew and heir has fallen; the Hon. Mrs. Evelyn Cecil, who has lost her only son; and Sir Herbert Maxwell, whose only surviving son, Captain Aymer Maxwell, was killed at Antwerp, whither he went on October 6 in command of a company of the Royal Marines. On his arrival in the beleaguered town Captain Maxwell was sent straight to the front, and was struck mortally almost immediately. On behalf of horticulturists we offer our sincerest condolences and respectful sympathy to those who have sustained these grievous losses.

—— The following interesting letter is from Monsieur A. Truffaut, sen., the well-known nurseryman of Versailles, whose sons, Georges (proprietor and editor of *Jardinage*) and Albert (manager of the Versailles nursery) are engaged with the French forces :—"I have read with interest the news which you gave in the last number of your paper of the French horticulturists and Belgians who are now engaged in the struggle which our two nations are obliged to undertake in order to combat the ambition of Germany. I wish to thank you particularly for having so kindly mentioned my sons and sons-in-law, all now in the military service at the front, and happily unwounded, with the exception of Monsieur Rene Moser, who has received a serious wound in the head, but whose satisfactory condition makes it hopeful that he will be completely cured. It is to be hoped that we shall not have too many deaths to record among horticulturists; but even up to now there are numbers of wounded among those whose names are well known. Since, thanks to the participation of the English army, we have been able to avert the invasion of Paris and the surrounding neighbourhood by the Teuton hordes, the horticultural establishments in Paris and its environs have not suffered; but, in consequence of this wretched war, which has dragged from their hearths all the gardeners from 18 to 40 years old, the work has been obliged to cease everywhere. Moreover, the sale of plants in Paris is nil, and the city presents an aspect of the utmost dreariness; the greater number of the shops are closed in the most fashionable quarters, and in particular the flower stalls, which usually constitute one of the chief charms of Paris. The horticultural journals have ceased publication, the National Horticultural Society of France has suspended its activities and the publication of its journal. The School of Horticulture at Versailles has had to close its doors for lack of students, the greater number having been called to the front. In short, there is a complete cessation of all (work) in connection with the interesting subject of horticulture. No one nowadays talks of anything but the events of the war, and this condition of affairs threatens to last a long while yet. However, we are ready to endure all the consequences, and with the assistance of our good Allies we hope to gain the victory in the end. We know that it will only be gained at the expense of great sacrifices, which will cause the ruin, and even the death, of many who are dear to us; but we trust that we shall be assured of enjoying for a long period the liberty of our labour, and the disappearance of the nightmare of Prussian militarism which has burdened us for twenty years. As I told you above, we have not, up to the present, any great damage [to nurseries or gardens] to describe, but if such events should occur I will make a point of informing you; and I beg to thank you in advance for giving a place in your paper to the victims of the war and to those whose interests are seriously prejudiced. French horticulturists would be very pleased and interested to receive, through the medium of the *Gardeners' Chronicle,* news of our excellent friends, the Belgian horticulturists, with whom we can no longer correspond."

Nurserymen and Prisoners.—A writer in the *Globe* predicts that after the war the nursery trade in England will boom owing to the destruction of many competing businesses in France, Belgium, and Germany. Meanwhile the industry here is depressed. Many of the employees have joined the colours; but a good many of the older men will have a bad time this winter unless the State takes them in hand. Why should they not be set to teach and superintend the German prisoners and our own unemployed unskilled labourers in the preparation of ground by spade labour for timber and fruit tree planting, sugar beet production, and similar work?

National Chrysanthemum Society's Meetings.—The secretary informs us that persons interested in the Chrysanthemum who are not members of the Society will be admitted without charge to the meetings of the Floral Committee for the remainder of the current session. The meeting to be held on November 4 will be of a special character, and will remain open from 4 o'clock until 9 p.m. The other meetings will be held on October 26, November 16, November 30, and December 9, and on each of these four dates the meeting will be closed at 5 p.m. All the meetings are held at Essex Hall, Essex Street, Strand.

Edinburgh Seed Trade Assistants' Association.—The 20th annual dinner of this Association, fixed for December 4, has been cancelled.

The Scottish Horticultural Association.—We understand that the Scottish Horticultural Association will probably appoint as its new president Mr. William G. Pirie, gardener to C. W. Cowan, Esq., Dalhousie Castle, Bonnyrigg. Mr. Pirie is one of the best known office-bearers of the association, having done excellent work in its interests for many years. At Dalhousie Castle Mr. Pirie has charge of a very notable garden, which he manages with great skill and success.

Lightning and Trees.—The interesting question of the liability to lightning of trees of different kinds is discussed by Mr. William Marriott (*Knowledge*, October, 1914), who draws attention to observations and records extending over a period of fifteen years. The results of these observations are summarised in the *Revue des Eaux et Forêts* as follow:—

	Oak.	Beech.	Spruce.	Pine.	Others.
Percentage of trees	11	70	13	6	—
Trees struck by lightning.. ..	159	21	20	59	20
Relative frequency	48	1	5	33	—

In discussing these results Mr. Marriott points out that all kinds of trees are more or less liable to be struck, and therefore it is unwise to shelter beneath any tree during a thunderstorm.

Autumn Tints and Fruit at the Arnold Arboretum.—A report from the Arnold Arboretum of Harvard University (U.S.A.) on September 29 last refers to the many different plants with brilliant autumn foliage and handsome and abundant autumn fruits. Such plants give a character and beauty to the autumn garden, states this report, which can be found only in eastern North America and perhaps in Japan, where the leaves of many of the native trees and shrubs assume brilliant colours before they fall. The autumn colour of a few plants is already brilliant. The earliest of the American trees to change the colour of its leaves is the Red or Scarlet Maple, Acer rubrum. On specimens of this tree growing in swamps the leaves are now often bright scarlet, while on trees growing on higher and drier ground the leaves are still bright green or only slightly tinged with red. The so-called Water Willow, Decodon verticillatus, often known as Nesaea, is a native of all the region from Maine to Florida and Louisiana, and is a shrub with arching stems growing only in the wet, often submerged borders of streams and ponds, where it may spread into broad thickets. By the borders of the ponds in the Arboretum the leaves of this plant are already bright scarlet, and for a few weeks the plants will be conspicuous among the green sedges and swamp grasses with which they are associated. The leaves of some of the forms of the so-called Virginia Creeper of eastern North America are already bright scarlet. The earliest to adopt its autumn dress and now in brilliant colour is Parthenocissus vitacea. This plant rarely has adhesive discs at the ends of the tendrils, and therefore cannot attach itself to the trunks of trees or to brick and stone walls, like Parthenocissus quinquefolia, which is often sold in nurseries as Ampelopsis Englemannii. There are many forms of the Virginia Creeper which can be seen on the trellis near the entrance to the shrub collection from the Forest Hills Gate. A few of the fruits which ripen in early autumn are already conspicuous. There is perhaps no shrub more beautiful in the autumn than one of the American Cornels, Cornus rugosa, or, as it is sometimes called, C. circinata. It is a tall, broad, round-headed shrub with greenish branches and round, oval, dark-green leaves; the flowers are not more showy than those of the other Cornels, but the clusters of light blue fruits on red stalks make them objects of much interest and beauty. There are a number of these plants in the Cornel group at the junction of the Meadow and Bussey Hill Roads, and there are great clumps of it among the Hickories and in other parts of the Arboretum. The red Osier Cornel, Cornus racemosa, often called C. stolonifera or C. candidissima, is also beautiful at this season, for the leaves are beginning to turn dark red and the plants are covered with abundant clusters of white fruits on bright-red stalks. This plant has been largely used in the Arboretum; it spreads rapidly into large, dense clusters, and with its good foliage, abundant flowers and beautiful fruits, few shrubs are more desirable for park and roadside plantations. The fruit of some of the new Chinese Cotoneasters is handsome and the autumn colouring of their foliage is often splendid. Most of these plants are perfectly hardy, and among them are certainly some of the most valuable garden shrubs of recent introduction.

A Blight- and Frost-Resisting Variety of Potato.—The "benevolent scepticism" which we expressed (*Gard. Chron.*, October 10, 1914, p. 250) with respect to the blight-resisting properties of the variety of Potato "New Era" is confirmed by the experience of Messrs. Sutton's, as the result of trials of this variety. Mr. Martin H. F. Sutton, who has sent us a tuber of New Era which shows undoubted evidence of attack by Phytophthora infestans, states in a communication accompanying the specimen that the firm obtained last year from New Zealand a small supply of the New Era tubers, and that in the trials both at Reading and in Scotland diseased specimens were found. Moreover, in the Potatos grown in the Scotch trial not only were the tubers diseased, but the foliage was touched by frost. Mr. Sutton concludes his letter by observing that "no one would rejoice more than I if an absolutely disease-proof variety were discovered. Of course, it is quite possible that this Potato may continue to prove disease-resisting in New Zealand, where Phytophthora has never obtained the hold that it has here."

Weather and the Crops.—The reports on the crops furnished by the Board of Agriculture show great differences between the east and west of England. In the east the weather has been so unusually dry that the root and seed crops are both poor; moreover, the land is too hard to plough, pastures are dried up and stock is not doing well. Western districts have been favoured with much more rain, and in these parts root crops promise to be more than an average yield, whilst seeds are strong and vigorous, pastures are full of growth, stock is thriving, and autumn cultivation is relatively well advanced. The Potato yield is expected to be fully equal to the average. Disease has appeared in certain districts, and especially in some parts of Yorkshire, but generally it does not appear to be serious. Seeds are dried up and very patchy in the east, variable in the Midlands, strong and very promising in the west, but on the whole not satisfactory. There have been some abundant second crops of hay in the north.

"INHERITED VARIATION IN PLANTS."

The above is the title of an interesting article by Prince Kropotkin in *The Nineteenth Century* for October. Many growers who like myself are amateur scientists may not have had an opportunity of reading the Prince's article, and therefore a brief reference to it in your columns will interest them. The statement is made that trees which shed their leaves every autumn in our temperate zone have a tendency to become evergreens when they grow in a moist tropical climate. Such trees change their character and continue to grow, flower and fruit without needing a period of rest. Could this change in character be transmitted by seeds—*i.e.*, is it inherited by trees raised from seeds? The work of Professor Ed. Bordage, who has spent many years in Réunion, an island in the Indian Ocean, is quoted. Peach trees raised in Réunion from seeds of European trees retain their leaf-shedding habit when grown in the cooler climate in the interior of the island, but when grown in the hot and moist climate of the coast they become evergreens in the course of ten to twenty years, the leafless period gradually shortening. A most interesting fact pointed out is that seedlings from these modified trees saved and sown in Réunion produce individuals inheriting the evergreen character to exactly the same degree as the mothers had acquired it.

Gaston Bonnier's experiments upon the adaptations of plants to an alpine and a maritime climate are referred to at length. Bonnier took a great number of plants from the plains and divided them in halves, planting the one half at a low level and the other in the Alps at altitudes up to 6,600 feet. These he observed for two, four, six and eight years. Almost all the plants planted at a high altitude took more or less the character of the alpine species of the same genera, not only in their general aspect, but also in the tissues and cells. Many of the plants took on the alpine character so thoroughly that the botanist could not but classify them as distinct alpine species. It would have been helpful if such alpine fixtures could have been seeded and the results from seedling plants noted.

The question of bud variation is also treated in this interesting essay. The writer says: "We know, or ought to know, by this time that propagation by buds is *not* a mere sub-division of the body-cells of a plant as Weismann described it in 1888. Even under the Weismann germ-plasm hypothesis every bud of a tree, a root-stock, or a tuber, if it is capable of reproducing the whole individual with its body-plasm and its germ-plasm, contains *the same germ-plasm* that is contained in an ovule or a grain of pollen."

Prince Kropotkin seems in cordial agreement with Professor Klebs, but to me this agreement does not make for the strength of the Prince's position. He says: "Altogether the conclusions of Professor Klebs may be summed up as follows:—(1) Most of the anomalies (the so-called inheritable 'sports' and 'imitations') can be obtained, like individual variations, through the action of modified surroundings; and (2) most of the anomalies, after having appeared accidentally, by means of a good supply of nourishment and selection, can be made inheritable race characters." Prince Kropotkin adds: "Being drawn from a wide series of well-thought-out experiments, these conclusions deserve full attention."

Let me again quote: "Speaking further of the countless experiments that have been made lately to verify the Mendelian rules relative to crossings, and in which some writers saw a disproval of the inheritance of characters acquired under the direct action of environment, Professor Klebs (says Prince Kropotkin) makes a very true remark. When we obtain bastards by crossing a blue-flowered variety of some plant with its white-flowered variety, and see that the hybrids follow the Mendelian rules, we must not forget that under certain external conditions the blue-flowered individuals also will produce white flowers, independently from any crossing, and the white-flowered individuals, under certain conditions, also may produce blue flowers." This surely is stating a case amateurishly. A reference is given—*Abhandlungen*, 1906, pp. 220-1. What I should like to hear about are the instances and "the external conditions" on which such an assertion is based. They may exist and be recorded as above. To me cases like those stated are unthinkable in pure Mendelian recessives.

Referring to the work of Dr. H. Nilsson-Ehle at the Swedish experimental seed station of Svalöf, Prince Kropotkin warns us against hasty conclusions in the direction of "pure" races. Not even are the conditions the same "for two plants on the same bed, or even two pods, or two ears of the same plant." He then proceeds: "This is why such 'characters' as the size or the weight of individual beans, the shade of colour in the grains of Wheat or Oats, and the like, are so unreliable in the supposed 'pure lines.' Even if they are inherited for two or three generations in accordance with the Mendelian rules, this must very often be due to the fact that the effects of an especially healthy (or unhealthy) constitution, due to accidental combinations of external influences, are felt in the next two or three generations." I have not seen "the size and weight of individual beans" nor "the shade of colour in grains of Wheat or Oats" claimed as Mendelian characters. I have not seen the doubling of African Marigolds claimed as a Mendelian character, but for nearly forty years I have observed that plant, and I know that in pure lines 50 per cent. of the plants raised from seed will each year yield handsome flowers almost as round as a cricket ball, the other 50 per cent. will yield single flowers, while in an inferior strain the half of the plants will have fuzzy-wuzzy flowers and the other half singles—so much for trained persistent selection.

In conclusion, Prince Kropotkin quotes Weismann's revised views as follows: "When a plant or an animal is placed in new conditions of life the nutrition of the germ-plasm determinants of a given organ may be altered. But the determinants of every organ are many and not all of them will be affected at once. Therefore it may be necessary that a number of generations should be submitted to the modifying influence, before the majority of the determinants of that organ are modified, so as to produce a modified organ in the progeny."

The concluding words of the article are: "The results of the later years' experiments have certainly turned the scales in favour of the inheritance of acquired characters, and proved the importance of the direct action of environment in the evolution of new species."

As a grower I am inclined to question this conclusion. *W. Cuthbertson, Duddingston.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

The Naming of Fruits.—With regard to Mr. Pearson's note on "Apple Names" (see p. 253), it does not matter much by what name Apples are known locally so long as by that name they are not foisted upon the public. All the writers on the subject as far back as they can be traced have noticed this multiplication of names, and no first-rate variety that has reached us has done so with one name only. I am sending you a few specimens to see if they have any other name than that by which I received them. One, Cardross Green, is a very desirable late variety and an abundant bearer. It came from Stirlingshire. Another from Melrose, the Friar Pippin, has never done much, and I am not sure this is the variety of that locality so famed for old Apples. The other two have been named Malster, but they are distinct though both are desirable varieties. One is a constant bearer and valuable for culinary uses as well as dessert. There exists some dubiety regarding the identity of King of the Pippins, some following the *Fruit Manual* of Dr. Hogg, who concluded that it is Golden Winter Pearmain. According to Dr. Hogg, a nurseryman, for trade purposes, changed the names, and though he does not give the name of the offender we know, from a remark of George Lindley, that it was Kirke, of the famous Brompton Nursery, who Lindley relates "brought King of the Pippins into notice." Dr. Hogg was for a brief period a partner in the Brompton Nursery, and doubtless had access to material affording information regarding the dealings of former tenants, and we know that he also obtained Forsyth's MSS., on which the latter based his work on *Fruit Trees*, published in 1802. In the *Manual* it is placed as an early variety, ripening in August, September. Forsyth, who is the first to mention King of the Pippins, gives its period as "January, and keeps till the latter end of March." London's variety is the same, also Lindley's and McIntosh's, the last to date 1840. In 1852 Dr. Hogg's statement first appeared. In the first edition of Thompson's *Gardener's Assistant* (1859), King of the Pippins, Hampshire Yellow and Golden Winter Pearmain are synonymous. I have discovered no early appearance of the last name either as distinct or a synonym. One thing, however, is clear, that the earlier authorities regarded King of the Pippins as a mid-winter Apple. It proved to be one of the most popular varieties at the Apple Congresses held in London and in Edinburgh, while Golden Winter Pearmain, regarded as distinct, is mentioned only a few times. The latter seems to be very scarce, and I have failed to secure specimens. The case, it will be seen, is rather different from that in which Jargonelle and La Cuisse Madame Pears were confounded. These merely changed their names. Their identity was not lost. In the case of the Apples, if we trust to Dr. Hogg's statement, King of the Pippins is perhaps not in cultivation, and that which is being so extensively cultivated for it is Golden Winter Pearmain, while the Apple bearing that name is extremely scarce. *R. P. Brotherston.*

[Friar we think is correct. Cardross Green is probably a local variety; we have not seen it before. Nos. 1 and 2 appear to be Malster.—Eds.]

State Insurance of Gardeners in the Forces.—Gardeners, on their enlistment in His Majesty's Forces during the war, should procure their Insurance Cards from their employers, stamped to the date of leaving their employement only, and send them to their respective societies. By doing this they will be entitled, on discharge to civilian life, to full benefits under the National Insurance Act. Gardeners while serving in the Navy or Army will be placed in B Class, and pay a contribution of 3d. per week, of which 1½d. will be deducted from their pay. They still remain members of their societies, and on their return to civil employment their cards will again be stamped with 7d. stamps. *A. C. Hill, Secretary, United Horticultural Benefit and Provident Society.*

A Large Elder Tree Trunk.—During my holidays recently I came across the largest Elder tree trunk I have ever seen. At 1½ foot from the ground the girth was 57 inches; at 3½ feet from the ground, 62 inches; while at 4½ feet the trunk branched into two limbs, each measuring 38 inches to 40 inches round. The height of the tree was about 25 feet. Was not such a trunk of abnormal size? *C. Turner, Highgate.*

Publications Received.—***The Coco-nut.*** By Edwin Bingham Copeland. (London: Macmillan and Co., Ltd.) Price 10s.—***Rural Improvement.*** By Frank A. Waugh. (New York: Orange Judd Company.) Price $1.25.—***Gardening for Amateurs.*** Edited by H. H. Thomas. Part 17. (London: Cassell and Co., Ltd.) Price 7d. net. —***Notes on Hops, 1912-14.*** By E. S. Salmon. (Wye: South-Eastern Agricultural College.) Price 6d.—***Tree-Growth.*** By A. C. Forbes. Clare Island Survey. Part 9. (London: Williams and Norgate.) Price 1s.—***Proceedings, Journal and Statement of Accounts of the Agricultural and Horticultural Society of India.*** January to June, 1914. (Alipur: Agri-Horticultural Society of India.)

SOCIETIES.

ROYAL HORTICULTURAL.

October 20.—The usual fortnightly meeting was held on Tuesday last in the Vincent Square Hall, Westminster. The exhibition was equal to the average R.H.S. autumn shows, and the fact that there was plenty of space rather enhanced the effect, for the exhibits were just sufficient to fill the hall comfortably, but it is to be regretted that visitors were few. It was primarily a fruit show, for the special competitive fruit exhibition having been abandoned, trade growers took advantage of this meeting to display large collections of Apples and Pears. Four of these exhibits were awarded Gold Medals. The Fruit and Vegetable Committee confirmed the provisional Award of Merit conferred on Apple Harry Pring in February last after the tree had been inspected recently by members of the Committee for its cropping qualities and habit.

There were several handsome groups in the floral section, notably of Collerette Dahlias, Asters, Carnations, Roses, Begonias and Chrysanthemums. The Floral Committee recommended five Awards of Merit to novelties.

There were fewer groups of Orchids than usual; the Orchid Committee awarded one First-class Certificate and three Awards of Merit. At the 3 o'clock meeting in the Lecture Room Rev. Professor George Henslow delivered an address on "Vegetable and Human Mechanics Compared."

Floral Committee.

H. B. May, Esq. (in the chair), Messrs. W. A. Bilney, E. A. Bowles, G. Reuthe, J. W. Moorman, J. F. McLeod, John Dickson, Chas. Dixon, Chas. E. Pearson, W. Cuthbertson, J. T. Bennett-Poë, W. P. Thomson, F. W. Harvey, W. J. Bean, John Green, C. R. Fielder, R. Hooper Pearson, Wm. Howe, J. Jennings, R. W. Wallace, Thos. Stevenson, R. C. Notcutt, H. J. Jones, Arthur Turner, Geo. Paul, W. B. Cranfield, E. H. Jenkins, and W. C. Baker.

AWARDS OF MERIT.

Begonia "Mrs. Harry Barton" (see fig. 110).—A sport from Emily Clibran, which possesses the free-growing and floriferous habit of that variety. The colour of the flowers is ivory white, lightly flushed with pink at the centre, but very variable. Shown by Miss Tanner, Caldecote Towers, Bushey, Hertfordshire (gr. Mr. W. Streeter).

Carnation "Wivelsfield White" (Perpetual Flowering).—The large blooms are pure white, of fine shape, very fragrant, and borne on long, stout stems. Shown by Messrs. Allwood Bros.

Chrysanthemum "James Stredwick."—A large Japanese exhibition variety which is probably a seedling or sport from Mildred Ware. The long, drooping florets are of medium width, and coloured a shade of terra-cotta suffused with rose. The pale golden reverse, seen on the undeveloped florets in the centre, is an additional attraction. Shown by Messrs. J. Stredwick and Sons.

C. "W. Rigby."—A very large incurved Japanese variety, which measured 8½ inches across. The colour is rich yellow. Shown by the Rev. Canon Cooper Marsden, Bickley.

Collerette Dahlia "Deveron."—The colour of this very beautiful variety is deep rosy-pink, with a suggestion of magenta; the "collar" is white and the flower is very well formed. Shown by Messrs. Dobbie and Co.

GENERAL EXHIBITS.

Messrs. James Veitch and Sons, Ltd., exhibited from their Feltham Nursery a very large number of winter-flowering Begonias, the group being awarded a Silver-gilt Flora Medal. The plants of Optima were of a useful size for decoration in 4½-inch pots, the pale yellowish-salmon coloured flowers being strikingly beautiful. Emita, with fine orange-scarlet blooms, was one of the brightest varieties, and others of much merit were Mrs. Heal, rose-carmine; Exquisite, salmon-pink; Elatior, semi-double, rose-carmine; and Rosalind, deep rose colour.

Messrs. H. B. May and Sons, Upper Edmonton, were awarded a Silver Flora Medal for greenhouse plants, including Begonias of the Gloire de Lorraine type, Bouvardias, Statice profusa, and large-flowered Cyclamen. The flowering plants were interspersed with well-grown Codiaeums and Ferns, a magnificent specimen of Drynaria quercifolia, the Oak-leaved Fern, with fifty basal fronds, forming an imposing centrepiece.

Messrs. W. Cutbush and Son, Highgate, arranged a group of flowering plants on a table. Erica gracilis was good, and there were well-flowered Liliums, Spiraeas, and the white Hydrangea hortensis Mme. E. Mouillère.

Mr. L. R. Russell, Richmond, exhibited, as a floor group, ornamental Ivies and various shrubs in berry, with plants of Clematis in bloom as a centrepiece. (Silver Flora Medal.)

Mr. Amos Perry, Enfield, showed about eighty varieties of Scolopendrium vulgare. The wonderful diversity of the foliage, as exemplified in the cresting, frilling and tufting of the different plants, showed how great a variation is possible in a single species. From a decorative point of view the most noteworthy varieties were ramo-marginatum, muricatum-grandiceps, grande, fimbriatum, cristulatum, marginatum, laceratum and Golden Queen. (Silver Flora Medal.)

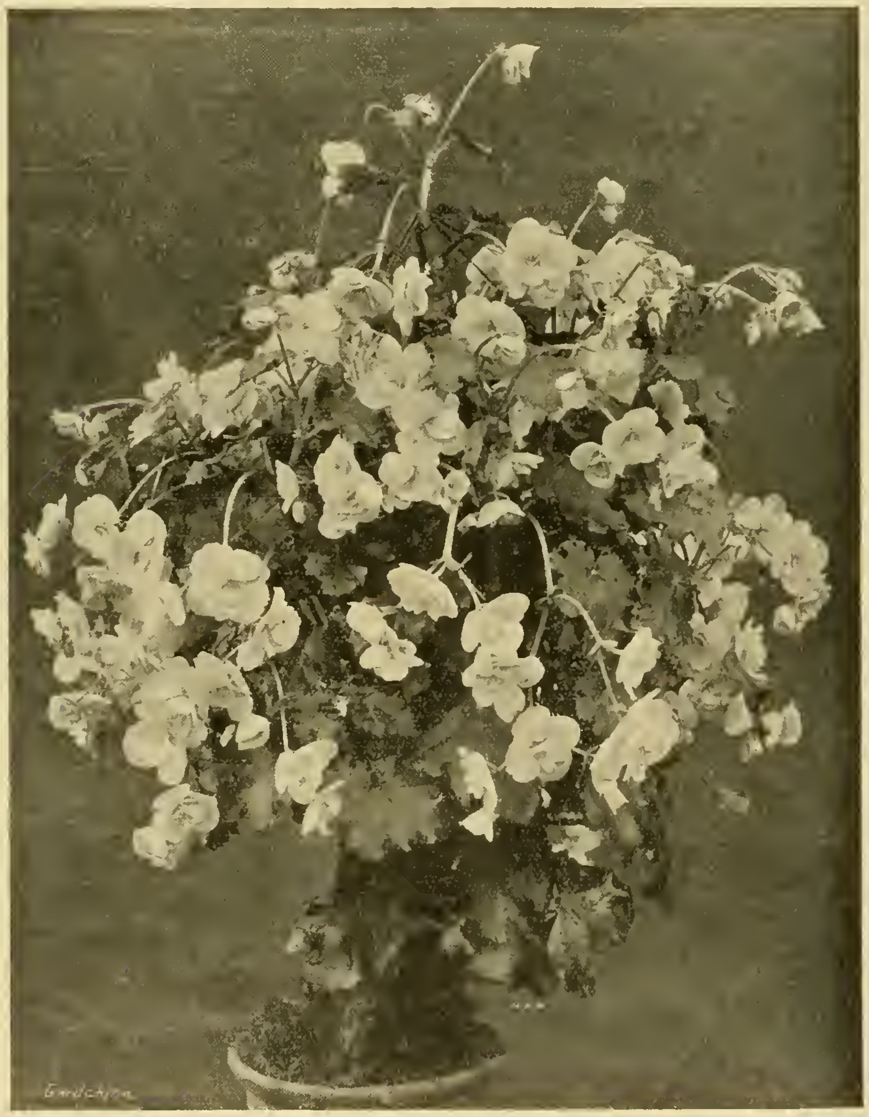


Fig. 110.—begonia "mrs. harry barton."
(R.H.S. Award of Merit, October 20, 1914. See p. 281.)

Messrs. W. Wells and Co., Merstham, showed Chrysanthemums and Antirrhinum Nelrose. The new incurved Japanese Chrysanthemum Thos. Beeson is a bronzy-yellow variety of the best exhibition type; Undaunted is a large Japanese variety of rosy-purple colour with a silver reverse; Earl Roberts is a charming flower of chestnut-red shade showing gold colour on the under surface. This firm had a fine new Carnation of American origin named Pink Sensation. (Silver Banksian Medal.)

Messrs. B. R. Cant and Sons, Colchester, showed splendid Roses from out-of-doors. Lady Hillingdon, apricot, is a splendid late bloomer, and others shown well were Jessie, Orleans, Sunburst, Augustus Hartmann and Irish Elegance. (Silver Flora Medal.)

Mr. C. Engelmann, Saffron Walden, exhibited a new Perpetual Flowering Carnation, named Bella, of faint rosy-buff colour, in a general collection. (Silver Banksian Medal.)

Carnations were also shown by Messrs. Stuart Low and Co., Enfield (Silver Banksian Medal); Messrs. Allwood Bros., Wivelsfield, Haywards Heath (Silver Banksian Medal).

Messrs. Dobbie and Co., Edinburgh, exhibited Collerette Dahlias, including a number of seedlings raised from seed sown in March last. A selection of the varieties include Prince of Orange, Tuskar, Eddystone, Skerryvore, Deveron and Maidens. (Silver Flora Medal.)

Mr. W. Treseder, Cardiff, showed Dahlias of all types, for which a Silver Banksian Medal was awarded.

Messrs. H. J. Jones, Ltd., Ryecroft Nurseries, Hither Green, Lewisham, had one of the most attractive groups in the Hall. It was composed of Chrysanthemums and Asters. Of the former there were splendid blooms of Bob Pulling, yellow; Betty Spark, pink; and Cranford Yellow. Aster Magnet is a deeper blue than Climax, and has all the merits of the older sort. (Silver-gilt Banksian Medal.)

Mr. Clarence Elliott, Stevenage, showed Phlox subulata Vivid, Gentiana acaulis, Crocus speciosus and other Alpines.

Messrs. Barr and Sons, King Street, Covent Garden, showed border Asters, Chrysanthemums, hybrid Nerines, Cyclamen neapolitanum and Violets.

Mr. James Box, Haywards Heath, Sussex, showed hardy flowers, such as Asters, Phloxes, Cimicifuga simplex, Solidago and Salvia virgata.

Mr. G. Reuthe, Keston, Kent, showed Alpines and hybrid Nerines, also fruits of Decaisnea Fargesii, resembling bluish pods. (Silver Banksian Medal.)

Mr. W. Wells, junr., Merstham, showed hardy flowers. Iris is a fine border Phlox of violet-purple shade.

Misses G. C. Price and A. B. Fyfe exhibited Carnations and Chrysanthemums.

Mr. J. J. Kettle, Corfe Mullen, Dorsetshire, showed the deep-blue violet La France, an improvement on Princess of Wales.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. secretary), W. Bolton, Gurney Wilson, S. W. Flory, G. Hunter, A. Dye, E. H. Davidson, W. P. Bound, H. G. Alexander, J. E. Shill, C. H. Curtis, W. H. Hatcher, J. Cypher, J. Charlesworth, Walter Cobb, F. J. Hanbury, R. A. Rolfe, C. J. Lucas, A. McBean, T. Armstrong, Stuart Low and Sir Harry J. Veitch.

AWARDS.

First-Class Certificate.

Laelia pumila alba Orchid Dene variety (see fig. 111) from Messrs. E. H. Davidson and Co, Orchid Dene, Twyford. A variety with pure white flowers, having only a slight yellow tinge in the tube of the lip. Two white forms have previously secured First - class Certificates, namely, praestans alba in 1889, which had a coloured blotch on the lip; and variety E. Ashworth, which, like the present form, was a true albino. (See *Gardeners' Chronicle*, January 2, 1897, fig. 3.)

Awards of Merit.

Laelio-Cattleya Lady Oliphant (*L.-C. Norba* × *C. Souvenir de Queen Victoria*), shown by Pantia Ralli, Esq., Ashtead Park, Surrey. A charming flower with greenish-yellow sepals and petals and finely-formed claret-coloured lip, with gold-tinted lines from the base.

Cattleya Ajax Orchidhurst variety (*aurea* × *Armstrongiae*), from Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells. A pretty flower with rose-pink sepals and petals and tubular lip, expanded in front and coloured ruby red. It is a free-flowering hybrid.

Odontonia Magali Sander var. xanthotes (*M. Warscewiczii alba* × *O. ardentissimum xanthotes*), from Messrs. Charlesworth and Co., Haywards Heath. The original form raised by Messrs. Sander and Sons had rose-coloured markings. The present variety, obtained by crossing the nearest approach to albinos on each side, is interesting, as the character of the parents is perpetuated, the flowers being white, with obscure greenish markings where the colour of normal forms usually develops.

GENERAL EXHIBITS.

Messrs. Charlesworth and Co. were awarded a Silver Banksian Medal for a group in which were noted Cattleya labiata Penelope, a good white flower with small purple blotch on the lip; several fine C. Adula and C. Fabia; Laelio-Cattleya Arachne, L.-C. Golden Oriole, L.-C. Elinor, and other showy Laelio-Cattleyas; the white Brasso-Cattleya Queen Alexandra, the singular Catasetum Randii; a very rich red form of Odontioda Brewii and others.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Banksian Medal for a group in which the hybrids and species were equally well represented. Fine forms of Cattleya labiata, C. Fabia, C. Peetersii, C. Mantinii, C. Hardyana and other Cattleyas; Laelio-Cattleya Phoenix, L.-C. Ophir, L.-C. Hon. Mrs. Astor, and some unnamed crosses were noted; and among the species the pretty blue-lipped Warscewiczella Sanderiana, Dendrobium eriaeflorum, Coelogyne Moorei and C. assamica, Cirrhopetalum Rothschildianum and the rare Peristeria aspersa, with globular, whitish flowers, spotted with claret colour, were included.

His Grace the Duke of Marlborough, Blenheim, Woodstock (gr. Mr. Hunter), showed Laelio-Cattleya luminosa Blenheim variety, a large flower with rich, canary-yellow sepals and petals and broad, vinous-purple lip.

Col. C. Francis Hayhurst, Bostock Hall, Middlewich (gr. Mr. A. H. Hall), sent Cypripedium Rolfei var. Colonel Hayhurst, a flower with nearly black markings on a white ground.

Thomas J. Finnie, Esq., Claygate Lodge, Claygate (gr. Mr. Frogley), again showed specimens of Cattleya labiata, one having 28 flowers, an even finer example than those shown at the last meeting. A vote of thanks was recorded.

A. Meyer, The Briars, Whetstone, N., sent Laelio-Cattleya Ledru Rollin (Carmen × Fabia) of good form. Sepals and petals lilac colour, lip dark purple.

Messrs. E. H. Davidson and Co., Orchid Dene, Twyford, showed a fine specimen of the pure white Cattleya O'Brieniana alba with six flowers on a spike, a white Brasso-Cattleya, and two superb dark forms of Cattleya labiata, named respectively Empress and Rubens, the latter having an almost entirely deep claret-crimson lip.

Messrs. J. and A. McBean, Cooksbridge, staged a group of bright-scarlet Odontiodas, dark varieties of Cattleya Fabia, C. Iris, and C. labiata; Brasso-Cattleya Iris, the rose-coloured Odontonia brugensis, Cymbidium Schlegelii and C. Doris.

Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells, showed a selection of new hybrids, including the pure white Cattleya Snowdon (Suzanne Hye de Crom × labiata alba); C. Princess Royal (Hardyana × Fabia, with white sepals and petals mottled with rose); the fine Laelio-Cattleya Sandhurstiana, nankeen yellow with gold-rayed, deep-violet lip; and an unnamed hybrid with yellow sepals and petals and elongated, purple lip.

Messrs. J. Cypher and Sons, Cheltenham, staged an effective little group of good varieties of Dendrobium Phalaenopsis, Cattleyas, and Laelio-Cattleyas. Specially noteworthy were Cattleya Bowringiana atro-sanguinea of rich bright colour; Brasso-Cattleya Digbyano-Warneri, deep rose-purple, dark forms of Cattleya Fabia, Laelio-Cattleya Cappei, and Cypripedium Rossettii.

Messrs. Hassall and Co., Southgate, showed a good yellow form of Cattleya Sylvia and their fine variety of C. Minucia, which shows the effect of C. Warscewiczii in the lip very distinctly.

Pantia Ralli, Esq., showed Brasso-Cattleya Cliftonii var. The Globe, a fine light form with petals over 3 inches across.

Messrs. Flory and Black, Orchid Nursery, Slough, showed Zygopetalum Blackii (Z. crinitum × Z. Perrenoudii), which in the upright habit of the spike and large flowers approaches Z. crinitum. The sepals and petals are chocolate-purple with green margin; the broad lip white tinged and veined with dark blue.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the chair), Messrs. W. Bates, J. Willard, Wm. Pope, H. Markham, Horace J. Wright, Owen Thomas, A. Bullock, Thos. Coomber, Geo. Wythes, E. A. Bunyard, John Harrison, C. G. A. Nix, F. G. Treseder, and A. R. Allan.

AWARD OF MERIT.

Apple Harry Pring.—This variety was before the Committee in February last, when the members expressed a wish to see it again after the tree had been inspected by a sub-committee. The report being favourable the Award of Merit was now conferred. It is a culinary variety of medium size, with yellow skin, flushed on the side next to the sun. The cooking qualities are said to be excellent. Shown by Mr. W. Peters, Givons, Leatherhead.

GENERAL EXHIBITS.

Messrs. George Bunyard and Co., Ltd., filled tabling running the entire length of the Hall with dishes of hardy fruits, principally Apples and Pears. The exhibit was one of the largest and most comprehensive collections of these fruits we have seen at R.H.S. exhibitions, and the quality generally was superb, although the colouring was perhaps not so pronounced as we have seen some seasons. Of a very large number of Apples we select the following:—Belle de Boskoop, King's Acre Pippin, Prince Alfred (very large), Twenty Ounce, Smart's Prince Arthur, Dutch Mignonne, Winter Ribston, Barnack Beauty, Ross Nonpareil, Cornish Aromatic, Gascoyne's Scarlet Seedling, Blue Pearmain, Wealthy, Transparent de Croncels and Sanspariel, which keeps good for a long time without shrivelling. Of Pears there were unusually fine fruits of Beurré Superfin, Black Worcester (syn. Verulam), Beurré Clairgeau, Beurré Alex. Lucas, Santa Claus, Beurré Diel, Marie Benoist, and Doyenné du Comice. (Hogg Gold Medal.)

Messrs. H. Cannell and Sons, Eynsford, exhibited a collection of Apples and Pears, comprising 146 dishes and about the same number of varieties. This fine exhibit was of the very highest quality, and was staged with excellent taste. Such popular sorts as Peasgood's Nonesuch, Rival, Allington Pippin, Cox's Orange Pippin, King of the Pippins, Blue Pearmain, Gascoyne's Scarlet Seedling, Emperor Alexander, Charles Ross, and Adams' Pearmain were shown in the best exhibition quality, and there were also fine specimens of Winter Peach, which has a very delicate bloom, Lady Henniker, Baron Wolseley, a new late culinary variety, with a ruddy flush; Smart's Prince Arthur, an old Apple of excellent quality, and the early culinary variety Lord Suffield, which caused considerable comment on its excellent appearance so late in the season. Good Pears were seen in Beurré Sterckmans, Beurré Alexander Lucas, Beurré Clairgeau, General Todleben, Conference and Durondeau. (Gold Medal.)

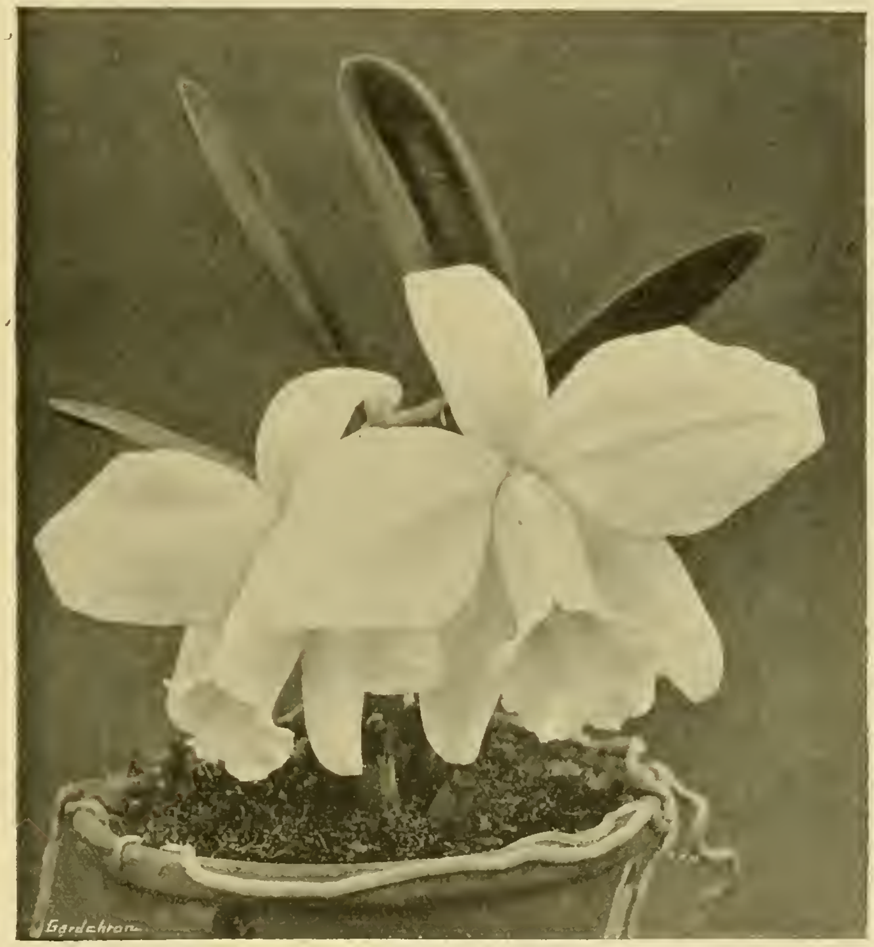


Fig 111.—Laelia pumila alba Orchid Dene variety.
(R.H.S. First-class Certificate, October 20, 1914—see p. 282.)

Messrs. R. C. Notcutt, Woodbridge, showed numerous varieties of Apples and Pears, which, in the opinion of many, were some of the best in the Hall. The Apples were remarkably highly coloured, and the best of these were Allington Pippin, Newton Wonder, Baumann's Red Reinette, Tower of Glamis, Court-Pendû Plat, Bismarck, Annie Elizabeth, Striped Beaufin, Dr. Harvey, Cox's Pomona, King of the Pippins, Golden Noble, and Peasgood's Nonesuch. There were fine specimens of the following Pears: Princess, Beurré Hardy, Doyenné de Boussoch, Thompson's, Durondeau and Conference. (Gold Medal.)

Messrs. J. Cheal and Sons, Crawley, staged 125 dishes of Apples and Pears, this collection also being a fine show of hardy fruit, the colour and general quality being exceedingly good. Of Apples there were excellent specimens of Egremont Russet, Lane's Prince Albert, Royal Jubilee, Claygate Pearmain, Gascoyne's Scarlet Seedling, Bramley's Seedling, Crawley Beauty, Rev. W. Wilks, Buxted Favourite, a Sussex late dessert variety; Nanny, another local variety of good quality with highly coloured skin; Beauty of Stoke, Mother and Newton Wonder. The few dishes of Pears included splendid fruits of Beurré Clairgeau and General Todleben.

Messrs. T. Laxton and Sons, Bedford, exhibited about 70 varieties of Apples and Pears, for which a Silver Knightian Medal was awarded. The exhibits of fruit staged from time to time by this firm are always marked by very tasteful arrangement, and this occasion was no exception; a few light foliage plants were worked into the scheme and metal epergnes were employed at intervals with good effect. Notable Apples were Gascoyne's Scarlet Seedling, Charles Ross, Cox's Orange Pippin, Lane's Prince Albert, Lord Derby, Allington Pippin, Newton Wonder, Ribston Pippin and Bramley's Seedling.

Charles Bayer, Esq., Tewkesbury Lodge, Forest Hill (gr. Mr. E. C. Wickens), exhibited good bunches of Gros Colman, Muscat of Alexandria, Black Alicante, Chasselas Napoleon and Appley Towers Grapes, for which a Silver Knightian Medal was awarded.

Messrs. James Carter and Co., Raynes Park, exhibited Capsicums in variety. The plants were all fruiting splendidly in small pots, and the fruits were not only of culinary value but highly decorative. The varieties were Sweet Spanish, with big red fruits, Long Yellow, Celestial, red; Elephant's Trunk, red; and Golden Dawn. (Silver Banksian Medal.)

NATIONAL DAHLIA.

October 15.—The annual conference of the above Society was held at Carr's Restaurant, Strand. Mr. Reginald Cory presided. Mr. C. H. Curtis acted as secretary in the absence of Mr. Riding, who was prevented from being present. Mr. Cory expressed his pleasure at presiding, but said his joy was mitigated to a great extent by a recollection of their recent loss in the death of their chairman, Mr. George Gordon. This was a loss not only to the Society but to horticulture in general. He then called upon Mr. Stredwick to read a paper on "The History of the Dahlia."

Mr. Stredwick began his historical notes by giving a few details in connection with the introduction of the Dahlia into Europe. They were admittedly based upon the writings of the late Richard Dean, and were in some respects open to question. He then proceeded on purely practical lines, dealing with his own experience in relation to the Cactus Dahlia, and the seeding of Juarezi, its prototype.

In the discussion that ensued Mr. Harman Payne pointed out that when the National Dahlia Society celebrated at the Crystal Palace in 1889 the hundredth anniversary of the introduction of the Dahlia into Europe they had the advantage of the presence of the late Mr. Shirley Hibberd. He there read a paper on the history of the Dahlia which for completeness had never been surpassed. His great literary skill and ability for original research work had already given the society an authentic and detailed history of the flower, and no writer since that meeting twenty-five years ago had contributed any fresh fact of historical importance. Mr. Stredwick, basing his statement on the authority of the late Richard Dean, said the Pompon Dahlia was raised in 1808, but to anyone who had any literary knowledge of the flower the date given was erroneous. Pompon Dahlias were not known and cannot be found in any available record until half a century later. Up to then only the old show and fancy varieties had been produced by the raisers. Criticising a few other points in Mr. Stredwick's paper Mr. Payne said that Dahlia variabilis was only one of several of the precursors of the modern Dahlia. The three original ones were depicted in colour in André Thouin's memoir in the *Annales du Muséum* in 1804, and others, notably D. coccinea, in the *Botanical Magazine*, and pictures of these and of many other old Dahlias were exhibited by him at the Dahlia Centenary Conference. He then called into question the use of the un-English word "collarette" for the French word "collerette," and drew attention to the absurdity of using the word "Pompon" Cactus Dahlia when applied to varieties of the small-flowered Cactus. The use of such a word in such a case shows a want of knowledge on the part of the originator as to what pompon really means.

Several other speakers followed. Their remarks dealt largely with cultural questions relating to the seeding and growing of the Cactus Dahlia and the origin of this type from Dahlia Juarezi. Messrs. Wyatt, West, and several others, including the chairman, contributed their experience in this respect, and after Mr. Stredwick's reply a paper was read by Mr. Jos. Cheal on "The Dahlia as a Decorative Plant for Parks and Gardens." This paper was a valuable and practical exposition of the subject, and included a list of suitable varieties in the various sections.

Mr. Curtis followed by reading a paper from Mr. Harrison Dick on "The Dahlia in America," which evoked an interesting discussion on several of the points raised. Mr. Dick divided his observations into the following headings:—"History," "Dahlia Societies in America," "Difficulties of Culture," "Cut Flower Trade" and "Imported Stock."

NATIONAL CHRYSANTHEMUM.

October 19.—At the meeting of the Floral Committee, held at the Essex Hall, Strand, on the 19th inst., the following awards were made.

First-Class Certificates.

James Stredwick.—A Japanese variety with long, well-formed flowers reminding one of the old Lady Harham. The colour is deep rosy-fawn with amber reverse. (Shown by Messrs. J Stredwick and Son.)

Elfrida.—A large exhibition single variety of a very pleasing shade of bronze. (Exhibited by Messrs. Cragg, Harrison and Cragg, Histon.)

Dorothy.—A golden-yellow market variety. (Shown by Mr. Norman Davis.)

The variety Lord Roberts was granted an Award for colour, and the Committee desired to see blooms again. It is a very shapely flower, of bright Chestnut colour with golden reverse. which shows conspicuously as the florets recurve. (Shown by A. Miller, Esq., Emlyn House, Leatherhead, gr. Mr. G. Milcham).

A Card of Commendation was granted to the variety Mr. Keith Luxford, a deep, wavy-petalled white Japanese variety. (From Messrs. W. Wells and Co.)

Messrs. Cragg, Harrison and Cragg showed Marjorie Hunt, a yellow sport from Mrs. Streeter, which was a sport from H. W. Thorpe. The Committee expressed a wish to see the variety on another occasion.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

September 24.—*Committee present:* Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. Bamber, J. J. Bolton, J. C. Cowan, J. Cypher, J. Evans, J. Howes, A. J. Keeling, J. Lupton, D. McLeod, W. J. Morgan, C. Parker, W. Shackleton, J. Smith, H. Thorp, Z. A. Ward, G. Weatherby, and H. Arthur (secretary).

R. Ashworth, Esq., Newchurch (gr. Mr. Gilden), staged a mixed group, for which a Silver gilt Medal was awarded.

Col. J. Rutherford, M.P., Blackburn (gr. Mr. Lupton), was also awarded a Silver-gilt Medal for a group composed principally of Cattleyas.

Wm. Thompson, Esq., Walton Grange (gr. Mr. Howes), was awarded a Silver Medal for a group. A Cultural Certificate was awarded for a finely-flowered plant of Odontioda Flamingo, a Bronze Medal being awarded to the gardener.

Messrs. Cypher and Sons, Cheltenham, staged a mixed group for which a Silver Medal was awarded. Notable plants were Cypripedium Maudiae, C. Leoniae Gratrixae, Oncidium incurvum album, O. varicosum Rogersii, and Dendrobium formosum giganteum.

Messrs. Sander and Sons, St. Albans, were also awarded a Silver Medal for a group in which were good examples of Cattleya Iris, C. Adula exquisita Maronii, Cypripedium Baron Schröder "Sander's" var., C. Pyrrha, and Anguloa Cliftonii.

AWARDS.

First-Class Certificate.

Cattleya Empress Frederick alba (C. Mossiae Wageneri × aurea), sepals and petals pure white, throat lightly veined, and base of lip coloured, from S. Gratrix, Esq.

Awards of Merit.

Cattleya Adula "Vale Bridge" var., from Mrs. R. Le Doux.

C. Iris "Ashlands" var., from R. Ashworth, Esq.

C. General Smith Dorrien (C. Maronii × C. Mantinii), from Col. J. Rutherford.

C. Sybil var. "Sir John French" (C. aurea × C. Iridescens), from S. Gratrix, Esq.

Anguloa Cliftonii "Rawdon" var., from Messrs. Mansell and Hatcher.

Cypripedium Actaeus gigas, from H. J. Bromilow, Esq.

First-Class Botanical Certificate.

Coelia macrostachya, from Messrs. A. J. Keeling and Sons.

Cultural Certificate.

Odontioda Flamingo, to Mr. J. Howes, gr. to Wm. Thompson, Esq.

ABERDEEN CHRYSANTHEMUM.

October 16.—A meeting of the Executive Committee of this Society was held in Aberdeen on the 16th inst., Mr. William Allan, chairman, presiding. It was decided to hold the annual show of the Society, as arranged, on November 20 and 21, in the Aberdeen Music Hall, and that the profits of the show be handed over to the Belgian Relief Fund. It was also decided to have stalls for the sale of flowers, and that the proceeds from these should be given to the same fund.

THE "FRENCH" GARDEN.

Crops in the Open.—Late Cauliflowers have proved more profitable this year than for several seasons past, owing to a shortage of the field crops. The inflorescences of any plants still in the ground should be kept covered, as a protection from frosts and heavy dews. Carrots grown on old manure beds are now ready for market.

Late Beans.—Late Beans are yielding fine pods. The frames should not be ventilated after about 3 p.m.

Lettuce.—Winter Lettuces growing in frames are well established, and ventilation may be given freely on all favourable occasions, closing the lights before dusk. The plants must be kept clear of decaying foliage.

Spinach.—Owing to the drought the early sowing of Spinach has bolted, and the crop will be useless for a winter supply. The second sowing should have all the bigger leaves removed.

Chicory.—Witloof Chicory will be very valuable this season, as the main source of supply in normal times is Belgium. Many crowns of the sowing made early in May have bolted, and are useless for forcing. The crop should be divided into three batches, to provide for a constant supply until the end of February. The first lot should be lifted now, all leaves broken by hand, and, after having sorted the roots in three sizes, allowed to remain on the ground for eight or ten days. After this period the crowns should be denuded of the leaf-stalks and placed closely together in single rows, made at 3 inches apart, in trenches 1 foot deep and 4 feet wide. Place frames over the trenches and fill them with well-broken soil, so as to cover the crowns with a layer four inches thick. Another similar layer of soil placed in the frame within the next three weeks will cause the heads to grow long. The lights should be placed on the frames, and the crop will not require further attention until it is ready for market, which happens generally five weeks after the roots are planted.

Nursery Beds.—Seedlings of Lettuce Little Gott are spreading their cotyledons, and may be transplanted at once. Select the stronger plants first to facilitate a quick growth of the smaller ones. The main roots should be pinched out and the seedlings transplanted 24 to 30 to every cloche. The work is rather tedious, and should be done at once to enable the planting of all varieties to be finished by November 1. Early sown Cauliflowers are also ready for pricking out, and should be transplanted 750 to every frame. Keep the lights closed until the plants are well established, when ventilation may be afforded during the day. All the nursery beds should be top-dressed with a layer of sifted, black soil. *Paul Aquatias.*

DEBATING SOCIETIES.

READING GARDENERS'.—The second fortnightly meeting of the session 1913-14 in connection with the Reading Gardeners' Association was held on the 5th inst. The President occupied the chair, and there was a good attendance. The subject for the evening, "How to Keep Mixed Borders Gay from Spring to Autumn," was introduced by Mr. H. C. Loader, of The Gardens, Erlegh Park, Reading. The lecturer explained the method he employed to keep the borders gay at Erlegh Park with perennials, biennials, annuals and bulbs. Mr. Loader said that the borders should be dug deeply and manured heavily, and such perennials planted as Michaelmas Daisies, Solidago, Heleniums (in variety), early flowering Chrysanthemums, Herbaceous Phlox, Pyrethrums, Polyanthus and Dahlias. The biennials recommended for planting between the perennials were Canterbury Bells (in mauve, white and pink) and Sweet Williams (Pink Beauty), and among annuals, Asters (Giant Single and Southcote Beauty), Cosmea, Red Sunflower, and Silene (dwarf pink). The lecturer also referred to the great value of May-flowering Tulips and Daffodils.

BRISTOL AND DISTRICT GARDENERS'.—The first meeting of the winter session 1914-15 was held at St. John's Parish Rooms on Thursday, the 8th inst. Dr. Shingleton Smith presided. Mr. M. Allwood gave a lecture on "Perpetual Carnations," illustrating his remarks with a series of slides. The 1st prize offered by Miss Garaway for four dishes of ripe fruit was won by Mr. Jennings.

MARKETS.

COVENT GARDEN, October 21.

Cut Flowers, &c.: Average Wholesale Prices

	s.d. s.d.
Arums (Richardias), per doz.	2 6- 3 0
Bouvardia, pink, per doz. bun.	4 0- 6 0
— white	4 0- 5 0
Carnations, per dozen blooms, best American varieties	1 0- 1 6
— smaller, per doz. bunches	10 0-12 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz.	2 0- 2 6
— yellow per doz.	2 0- 2 3
— pink ,,	1 9- 2 0
— bronze	1 6- 1 9
— white, medium per doz.	1 3- 1 6
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun.	3 0- 5 0
— — yellow, per doz bun.	2 6- 4 0
— — pink, per doz. bun.	3 6- 5 0
— — bronze, per doz. bun.	3 6- 5 0
Eucharis, per doz.	2 0- 2 6
Gardenias, per box of 15 and 18 blooms	1 3- 2 0
Lapageria alba, per doz. blooms	1 6- 2 0
Lilium auratum, per bunch	2 6- 3 0
— longiflorum, per doz., long	1 6- 2 0
— — short	1 9- 2 0
Lilium lancifolium album, long	1 0- 1 6
— — — short	1 3- 2 0
— — rubrum, per doz., long	1 0- 1 3
— — — short	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special	15 0 —
— special	10 0-12 0
— ordinary	8 0- 9 0

	s.d. s.d.
Marguerites, per doz. bunches	1 0- 1 3
Michaelmas Daisies, per doz. bunches	2 0- 3 0
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya	9 0-10 0
— Cypripedium,	1 6- 2 0
— Harrisonii, per doz. blooms	4 0- 5 0
— Odontoglossum crispum	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— white, per doz. bunches	5 0- 6 0
Physalis, per doz. bun.	5 0- 6 0
Roses: per dozen blooms, Bride	0 6- 1 3
— Frau Karl Druschki	1 0- 1 6
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	0 9- 1 0
— Liberty	1 0- 1 6
— Madame A. Chatenay	1 0- 2 0
— Melody	1 0- 1 3
— My Maryland	0 9- 1 3
— Niphetos	1 0- 1 3
— Prince de Bulgarie	1 0- 1 6
— Richmond	1 0- 1 6
— Sunburst	1 0- 1 6
— Sunrise	0 9- 1 0
— White Crawford	1 0- 1 6
Statice, mauve, per doz. bunches	2 0- 2 6
— white, per doz. bunches	2 0- 3 0
Stephanotis, per 72 pips	1 9- 2 0
Tuberoses, on stems, per doz.	0 5- 0 6
— short, per doz.	0 3- 0 4
Violets, English, per doz. bunches	1 0- 1 6
— Princess of Wales, doz. bun.	2 0- 3 6
White Heather, per doz. bunches	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum Fern (Maidenhair), best, per doz. bunches	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches	12 0-18 0
— Sprengeri	6 0-12 0
Autumn foliage, various, per doz. bunches	4 0- 6 0
Carnation foliage, doz. bunches	3 0- 5 0

	s.d. s.d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch	1 0- 1 6
Honesty, per doz. bun.	10 0-12 0
Lichen Moss, per dozen boxes	9 0-10 0
Moss, gross bunches	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches	8 0- 9 0
Smilax, per bunch of 6 trails	1 0- 1 3

Remarks.—The supplies this week have been even larger than last week, and it is difficult for growers to clear their stocks of Chrysanthemums, which are arriving in very large quantities. Bunches of white Chrysanthemums are much cheaper; Roi de Blancs is still the best variety of this type. There are some very good single Chrysanthemums on sale. Carnations are almost as plentiful as Chrysanthemums. The supplies of Lilium Harrisii, L. lancifolium album, and L. lancifolium rubrum are sufficient. Lily-of-the-Valley, Gardenias, Tuberoses and English Violets (Princess of Wales) are all exceptionally fine. Roses are selling a little better, the good quality and low prices attracting buyers. There are fine blooms of Madame Abel Chatenay, Melody, My Maryland, Liberty, Richmond, Sunburst, Kaiserin Augusta Victoria and White Crawford. Eucharis is more plentiful. Stephanotis is still arriving from Guernsey, and a few bunches of yellow Narcissus have arrived from Scilly. Physalis is nearly over. Prices throughout have been lower this season than in previous years.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri	6 0- 8 0

	s.d. s.d.
Aspidistra, per doz., green	18 0-30 0
— variegated	30 0-60 0
Begonia Gloire de Lorraine, 48's, per dozen	10 0-12 0
Cacti, various, per tray of 15's	4 0 —
tray of 12's	5 0 —

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s.d. s.d.
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0
Croton, per dozen	18 0-30 0
Cyclamen, 48's, per doz.	10 0-12 6
Dracaena, green, per dozen	10 0-12 0
Erica nivalis, 48's, per dozen	9 0-15 0
— — thumbs, per doz.	3 0- 5 0
— gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0-10 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen	8 0-12 0
— in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz.	4 6- 5 0
— — 60's, per doz.	3 0- 3 6

	s.d. s.d.
Geonoma gracilis 60's per dozen	6 0- 8 0
— larger, each	2 6- 7 6
Kentia Belmoreana, per dozen	5 0- 8 0
Kentia Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0-36 0
Latania borbonica, per dozen	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz.	15 0-21 0
— longiflorum, per dozen	12 0-15 0
Lily-of-the-Valley	—
— 48's, per dozen	21 0-30 0
Marguerites, in 48's, per doz., white	—
Pandanus Veitchii, per dozen	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Solanums, 48's, per dozen	8 0- 9 0
Spiraea, white, 32's per dozen	6 0- 8 0
— pink, 32's, per dozen	9 0-12 0

Remarks.—Trade shows no improvement. Ericas are too numerous to be valuable, and all other flowering plants are very cheap. Cyclamen in 48 size pots are good specimens, but there is no demand for them.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples—	
— Californian, Newtown Pippins, per box	6 0- 7 6
— English dessert, per ½ bushel	2 6- 4 6
— cooking, 1 bush.	2 0- 4 0
Bananas, bunch:	
— Medium	4 0- 4 6
— X-medium	5 0- 6 0
— Extra	6 6- 7 6
— Double X	8 0- 8 6
— Giant	9 0-10 0
— Red, per ton	£20 —
— Jamaica, p. ton	£15 —
Cobnuts, per lb.	0 5 —
Cranberries, per case	9 0-12 0
Grapes: Alicante, per lb.	0 6- 0 9
— Black Hamburgh, per lb.	0 6- 1 0
— English, Gros Colmar, per lb.	0 8- 1 0
— Gros Maroc, per lb.	0 9- 1 0

	s.d. s.d.
Grapes (*continued*)—	
— Muscat of Alexandria	1 0- 2 6
— Canon Hall, per lb.	1 0- 4 0
Melons	0 9- 3 0
Nuts, Brazils, per cwt.	60 0 —
— Chesnuts, Redon, per bag	16 0-18 0
— Walnuts (English), per doz. lb. Doubles	7 0- 8 0
— — Singles	2 6- 3 6
Pears, American, per barrel	15 0-18 0
— Californian, per case	9 0-12 0
— English, ½ sieve	2 6- 5 0
— stewing, per bushel	2 6- 3 0
Prunes, per ½ bus.	3 6 —
Quinces, per ½ sieve	3 0- 3 6
Sloes, per doz. lbs.	1 6 —

Remarks.—Large quantities of English Apples are arriving in Covent Garden Market daily, and also heavy consignments of Apples from Nova Scotia. English and Californian growers are sending Pears in quantity; the bulk consists of the varieties Doyenne du Comice and Pitmaston Duchess. Pears received from U.S.A. in barrels are principally the Bartlett variety. Plums are over, but Melons are still available. Very plentiful supplies of Grapes are arriving from home growers, the Channel Islands, Holland, Almeria and Lisbon. Ample supplies of Quinces are available. There is a record crop of Walnuts and Cobnuts, and Walnuts are arriving from France. English Tomatos and Cucumbers continue to be plentiful; Teneriffe growers are commencing to send Tomatos.

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Beans, French, per lb.	1 0- 1 3
— Scarlet Runner, per bushel	10 0 —
Beetroot, per bushel	3 0- 3 6
Brussels Sprouts, per ½ bus.	3 6- 4 0
Cabbages, per tally	8 0-10 0
Carrots, per bag	3 6- 4 6
Cauliflowers, per tally	10 0-12 0
Celery, per doz. bun.	9 0-12 0
Corn cobs, per doz.	1 0- 1 6
Cucumbers, per flat	4 0- 5 0
Garlic, per lb.	0 7- 0 8
Horseradish, English, per bundle	2 6- 5 0
Leeks, per dozen	1 6- —
Lettuce, round, per bus.	1 6- 2 0

	s.d. s.d.
Mint, per doz.	2 0- 4 0
Mushrooms, cultivated per lb.	1 6 —
— Buttons	1 6 —
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per bus.	3 0- 3 6
Parsley, per dozen bunches	1 0- 2 0
Sage, per dozen	2 0- 4 0
Tomatos, English, per doz. lbs.	2 9- 3 3
— seconds	1 6- 1 9
Thyme, per dozen bunches	2 0- 6 0
Turnip, English, per bag	3 6- 4 6
Watercress, per doz.	0 4- 0 6

Remarks.—This week there has only been a limited supply of Horse Radish, Cabbages, Brussels Sprouts, Cauliflowers, Runner Beans and Mushrooms. Forced French Beans are available. There has been a slight improvement in the demand for ordinary vegetables, but trade for the most part is slow.—*E. H. R., Covent Garden, October 21, 1914.*

New Potatos.

	s.d. s.d.
Bedford	3 0- 3 6
Blackland	2 9- 3 0
Lincoln	3 0- 4 0
Kent	3 3- 4 0
Essex	3 0- 3 3

Remarks.—Trade has improved slightly. Consignments are quite equal to the demand. Stocks in London are fairly large. Prices remain about the same as last week.—*Edward J. Newborn, Covent Garden and St. Pancras, October 20, 1914.*

Obituary.

C. Beckett.—We regret to record the death of Mr. C. Beckett, sen., on the 17th inst., in his 89th year, at his residence, The Rosary, Boreham Wood, Elstree. For a quarter of a century deceased was gardener at Remenham Lodge, Henley-on-Thames. For about the same period he was bailiff to Sir Philip F. Rose, Bart., Bayners, Penn, Buckinghamshire, but he retired from service 11 years ago. He passed away peacefully after visiting his garden, in which he picked some Roses just before his death. He leaves three sons, Mr. Edwin Beckett (gardener to the Hon. Vicary Gibbs, Aldenham House), Mr. Charles Beckett (gardener to Hon. James Ward, Chilton, Hungerford), and Mr. Thomas A. Beckett (farm steward to Mrs. McIntosh, Havering Park Farm, Romford), and four daughters. He was buried in the same grave as his wife, who predeceased him some years, in the churchyard of Tylers Green, Penn.

F. Phippen.—The many friends of Mr. F. Phippen will regret to learn of his death, which occurred on the 20th inst., from pneumonia. Mr. Phippen for many years represented Messrs. Jarman and Co. at the principal shows in the country, and was in the service of that firm for about twenty years. The interment will take place to-day (the 24th inst.) at 3 p.m.

THE WEATHER.

The Following Summary Record of the weather throughout the British Islands for the week ending Oct. 17 is furnished from the Meteorological Office :—

REMARKS ON WIND AND WEATHER.

The changes in barometrical pressure were very gradual, and the general character of the weather quiet. A depression of little depth appeared off our North-west coasts on the 12th, with a smaller minimum off the South-west of England. These subsequently moved slowly eastward, and finally southward, while an anticyclone extended over these islands from Scandinavia. The wind, after blowing from some southerly point as the depressions approached, shifted to the northward or north-eastward, and for a time on Wednesday it blew a fresh or strong breeze on various exposed parts of the coast. Rain was experienced in most places during the middle of the week, but the quantity was generally slight. At Valencia, however, as much as 2.4in. was experienced on the 11th. During the week as a whole the weather was dry, and there was not much sunshine. Temperature exceeded the normal very generally, and as the minimum readings were high the diurnal range was unusually slight for the time of year.

THE WEATHER IN WEST HERTS.

Week ending October 21.

St. Luke's Little Summer.—There is often about this time a spell of fine dry weather, and this has received the name of "St. Luke's little summer." During the past week the weather has been warm for the time of year, and more particularly was this the case at night. The ground is now a degree warmer than is seasonable both at one and two feet deep. Rain fell on the first two days of the week, and to the total depth of nearly half-an-inch. Of that amount four-fifths was deposited on the first day (14th). In order to show how dry the weather has recently been, it may be stated that that day was the wettest there has been here for eleven weeks. Notwithstanding the moderate character of this rainfall, a few drops of rainwater have each day since then come through the bare soil percolation gauge. The sun shone on an average for two hours a day, which is an hour a day short of the mean duration for the same period in October. Light airs and calms have again alone prevailed, and the direction of these light airs has been exclusively some point between north and east. There was about a seasonable amount of moisture in the air at 3 p.m.—*E. M., Berkhamsted, October 21, 1914.*

GARDENING APPOINTMENTS.

[*Correspondents are requested to* write the names of persons and places as legibly as possible. *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. Thomas Weaving, for the past 4 years at Laughton Lodge, near Lewes, Sussex, as Gardener to Sir James Duke, Bart., White Lodge, Maidenhead Court, Maidenhead, Berkshire.

Mr. John Smith, for the past 2 years and 8 months Gardener to Albert Brassey, Esq., Heythrop Park, and previously for 13 years Gardener to the Marquis of Ripon, Coombe Court, Surrey, as Gardener to Lord Cowdray, Paddockhurst, Worth, Sussex.

Answers to Correspondents

Alstroemeria and Ixiolirion : *A. North.* If the Alstroemerias are established in pots plant them at one foot apart in spring rather than at the present time. They resent being pulled to pieces, and if your stock consists of single tubers it would be safer to establish them in pots first. Ixiolirions individually take up very little space, and to secure the best effect the bulbs should be planted one or two inches apart, thus forming a group of one dozen at least. Choose a warm, protected position for them, where they will receive plenty of sunshine. Narcissus Tazetta forces readily, but if excessive heat be applied at an early stage it results in "blindness," and even when applied after the flower-stems are well forward it results in small, flabby blooms. The Lilium should be put in a pot just large enough to accommodate the bulb. Half fill the pot with a compost consisting of half loam, half leaf-mould or peat, and merely cover the base of the bulb with the materials. Do not water the soil unless it becomes dry, and then only just a little. The place in which the bulb is stored over the winter should be quite cool, though frost-proof. Roots and top growth will develop, and in March or April the bulb may be planted out, placing the base 9 or 10 inches below the surface.

Amaryllis Belladonna : *F. P. W.* It is a common practice to cut the flower-spikes of Amaryllis Belladonna, and their removal will certainly not affect the plants flowering in the following season. Remove all the flower-spikes immediately after the flowers are over to prevent seeds forming which would weaken the plants. At the same time top-dress the bulbs with good loam, a little lime rubble and well-decayed manure.

Celery Unhealthy : *J. S. Knight.* The leaves are mined by the maggot of a fly. The best treatment is to dust the leaves with soot early in the year before the fly appears. The leaves are also affected with the disease known as late blight, Septoria Petroselini. For this disease the remedy is to spray the plants with ammoniacal carbonate of copper, but as the season is far advanced spraying now will not effect a cure, although it may check the disease from spreading. As your plants are in such a bad way take special precautions to burn all the upper part of the foliage when the heads are prepared for the table. Next season select a site for your Celery beds as far removed as possible from the ground used this season, and do not wait until the fly appears before dusting the plants with soot.

Cypripedium Flower Abnormal : *Mrs. T.* The flower you send is interesting, the changed form of the labellum extended into side lobes especially. The column, as usual in such cases, is twisted, probably by the production of more than the usual number of stamens. There are three anthers, the usual number being two.

Gardener's Notice : *R. W. D.* We fear your employer is right, and that in your position as a single-handed gardener living off the place and paid weekly you cannot insist on more than a week's notice if your employer is not prepared to be more considerate in these trying times.

Grapes Attacked by Flies : *W. W.* Occasional depredations by the so-called Grape Fruit fly (Drosophila melanogaster) have previously been recorded in Britain, although the species is better known on the Continent and in America. The females lay their eggs on almost any decaying or fermenting matter, and the larvae hatch and develop rapidly. The latter are rather active, and in a week or two are fully grown and pupate, the adult fly emerging shortly afterwards. The winter is probably passed in the pupal stage. These flies do not appear generally to attack perfect fruit, but if any of the berries be at all damaged they will quickly visit them and deposit their eggs. The decaying juices running on to other berries spread further decay and give footholes for the larvae, which, however, will also bore from one grape to another. The main point in the treatment therefore is to see to the cleanly condition of the grapes and muslin placed over the open windows and lights would be beneficial in keeping the flies out of the vinery.

Hot-water Pipes : *J. H.* The piping you refer to, provided it is sound, may be used again. Our experience of steam piping used in various lengths in connection with the ordinary 4 inch water pipes is perfectly satisfactory, and such piping take no longer to heat than the ordinary water pipes to which they are attached. Steam piping may be used safely either as mains or branch pipes; lengths devoid of flanges may be connected by means of sliding collars. You say that "steam piping was obviously not intended for giving off heat, but simply to retain steam." But so long as the pipe contains steam heat will radiate from it. Where individual houses are divided into two or more compartments, and each division is heated separately from the same branch main, it is necessary to have throttle valves fixed in the return of each division in order to be able to regulate the circulation of hot water to advantage in each compartment. Otherwise the water will "back up" the returns consequent upon the slight rise in the pipes in the opposite direction.

Iron in Service Water : *Alpha.* If you allow the tap to run for a time the water will be gradually free from iron rust and may then be used for watering plants. Water drawn through newly installed pipes is always more or less brown from iron rust, but after a time it becomes clear, and continues so.

Names of Fruits : *A. B., Hants.* 1, Doyenné de Boussoch; 2, Gratioli de Jersey; 3 and 6, Duchesse d'Angoulême; 4, Pitmaston Duchess. *A. Langford.* 1, Beurré Superfin; 2, Doyenné de Boussoch; 3, Golden Noble; 4, King of the Pippins. The Pear is Olivier de Serres. —*G. J.* 1, Wyken Pippin; 2, Stirling Castle; 3, Yorkshire Beauty; 4, Roundway Magnum Bonum; 5, Tower of Glamis.—*W. Over.* 1, decayed; 2, Pitmaston Duchess; 3, Winter Hawthornden; 4, Warner's King; 5, Domino. —*J. S. E.* 1, decayed; 2, Knight's Monarch; 3, Comte de Lamy; 4, not recognised; 5, Beurré Capiaumont; 6, Passe Colmar; 7. Beurré Bachelier.—*F. C. W.* 1, Potts's Seedling; 2, Scarlet Nonpareil; 3, Pitmaston Duchess; 4, Williams' Bon Chrêtien; 5, Beurré d'Amanlis; 1, Louise Bonne of Jersey; 2, Vicar of Winkfield.—*S. O.* 1 and 6, Newton Wonder; 2, Gascoyne's Scarlet Seedling; 3, Allington Pippin; 4, Ecklinville Seedling; 5, Wealthy.—*A. B.* 1, Allington Pippin; 2, Newton Wonder; 3, Claygate Pearmain; 4, Mabbot's Pearmain; 5, Northern Spy; 6, Mère de Ménage.—*R. Howes.* 1, not recognised; 2, Reinette de Canada; 3, Ribston Pippin; 4, Summer Golden Pippin; 5, Ashmead's Kernel; 6, Court-Pendû Plat; 7, Hawthornden. Pear, Beurré d'Anjou. — *Sevenside Fruit Farm.* 1, not Charles Ross—probably Malster; 2, Gratioli of Jersey; 3, Beurré Diel; 4, resembles Minchull Crab. Beauty of Hants is a synonym of Blenheim Pippin, which is not your variety.—*Bayliffe.* 1, Lord Derby; 2, Alfriston; 3, Small's Admirable; 4, Queen Caroline; 5, Prince Albert; 6, Cox's Pomona; 7, Old Nonpareil; 8, Bramley's Seedling; 9, Dumelow's Seedling (Wellington).—*J. D.* 1, Beurré Superfin; 2, Comte de Lamy; 3, not recognised; 4, White Doyenné; 5, Triomphe de Jodoigne; 6, Beurré Jean Van Geert.— *A. J. M.* 1, Yorkshire Beauty; 2, Bismarck; 3, Reinette du Caux; 4, Blenheim Pippin; 5, Cox's Pomona; 6, September Beauty.—*Thos. Denny.* Colmar d'Eté. — *W. B.* 1, Marie Louise; 2 and 3, Beurré Diel; 4, not recognised.—*D. D. S.* 1. Decayed; 2, Cox's Orange Pippin; 3, The fruit has a peculiar stalk, nevertheless we believe it is Warner's King.—*W. E. P.* 7, Dumelow's Seedling (Wellington); 8, Warner's King; 9, Blenheim Pippin; 10, Charles Ross; 11, not recognised; 12, Annie Elizabeth.—*C. B. N.* 1 and 3, Beurré Diel; 2, decayed; 4, Nouveau Poiteau; 5, Passe Colmar; 6, Conseiller de la Cour; 7, Alfriston; 8, Northern Spy; 9, King of the Pippins.—*A. H. M.* 1, Brockworth Park; 2, Lane's Prince Albert; 3, Lady Henniker; 4, Malster.

Names of Plants : *Ireland.* A form of Allium Cepa, the common Onion.—*A. B. M.* Abronia umbellata. — *W. T.* Hibiscus Huegelii. — *Balerno.* 1, Aster diffusus; 2, A. Novi-Belgii Archer Hind; 3, A. N.-B. Daisy Peters; 4, A. N.-B. Beatrice; 5, A. N.-B. Pygmalion; 6, A. N.-B. Top Sawyer; 7, Helianthus mollis.— *F. A. E.* Begonia Evansiana, often called Begonia discolor in gardens—*C. M.* Euonymus Europaeus (the Spindle tree).

Preservation of Walnuts : *C. W.* A good method of preserving Walnuts is to dig holes in the open ground and sink Seakale pots up to the rims. A piece of slate should be placed at the bottom to prevent worms from getting into the pots. Put the nuts into the pots, and place the lids on securely. In these conditions the nuts will remain fresh for several months. Another way to keep Walnuts is in tubs or boxes buried in white sand.

Privet Attacked by Leaf Miner : *S. H. C.* Spray the plants with quassia extract or other distasteful liquid in order to prevent the depositing of the eggs on the leaves. The spraying should be done at intervals. Remove badly affected leaves and burn them. Kindly send specimen of Euonymus for examination.

Seedling Nerines : *S. B., Westbury.* The flowers you sent us are exceedingly interesting. One of the varieties has segments 2½ inches long, prettily reflexed, and of a brilliant rose colour. The other, though not quite so large, is crimson, and in some respects is more of the form favoured by florists. The former variety evidently takes more after the parent, N. Bowdenii, and the latter after N. Fothergillii (major). You should grow the plants for another season, and then exhibit them before the Floral Committee of the Royal Horticultural Society, with a view to their being considered by that Committee.

Water-lily Pond : *F. P. W.* The bottom and sides of the pond having been concreted, fill the pond to the brim with water, but do not place soil in position. The water will render the cement perfectly hard before the winter and dissolve elements harmful to the plants from the cement. It is advisable to leave the pond thus filled until the end of April next, this being the best time of the year for either dividing or re-planting Nymphaeas. To calculate the number of plants needed, allow a distance of 5 feet for the stronger-growing plants and 3 to 4 feet for the smaller ones. Proceed to plant as follows:—Place some bricks in circles, two bricks in thickness and about 2 feet or so in diameter. Lay some potsherds in the bottom for drainage—say, to a depth of 2 inches—and then fill the enclosure with soil and plant therein. Lay some broken stones on the surface to prevent the tubers from floating. Another plan is to plant the Nymphaeas in baskets, tying the roots to the baskets for the same reason. The soil should consist of turfy loam, road-scrapings that are free from tar or petrol—or, better, river sand—and some coarse leaf-mould. Place some of the leaf-mould over the drainage material, and fill the remaining space with the compost, making it firm. Strands of string fixed across the baskets will suffice to secure the roots in position. Remove the first flower-buds so that the plants may concentrate all their energies upon leaf development.

Communications Received.—S. B.—J. F. W.—R. A. G.—W. F.—W. B.—Hortus—C. M.—E. M.—F. P. D.—G. N. M.—J. G.—F. W. P.—J. H. W.—R. D.—A. B.—C. T.—Dun—A. B. M.—P. B. B—C. J. C.—C. T.—S. M.—E. N.—H. C. M.—C. T. G.—H. B.—S. L. B.—W. F. R.—G. A. U.—S. D.—Mrs. W.—J. I.—E. P.—F. C. L.

THE
Gardeners' Chronicle
No. 1,453.—SATURDAY, OCTOBER 31, 1914.

CONTENTS.

Apples, the naming of 299
Begonia Nancy .. 297
Belgian workers, suggested help from .. 299
Bletchley Park, Buckinghamshire 289
Farm produce for His Majesty's forces .. 291
Farrer's, Mr. Reginald, explorations in China 287
Flies, the destruction of 294
Florists' flowers—
  Early Chrysanthemums 288
France in 1870 288
Fruit crops in New Hampshire and Maine 297
German seed trade and Holland 296
Glasgow and the proposed Loch Lomond park 297
Government trading .. 299
Hops, experiments with 297
Horticultural instruction in Scotland .. 297
Lemoine, Mons. E., letter from 295
Market fruit garden, the 298
Orchid notes and gleanings—
  Odontonia Magali Sander var. xanthotes 288
Obituary—
  Cannell, Henry .. 300
Pelargoniums 70 years ago 296
Pitwood, the scarcity of 297
Plants by post, the transit of 296
Rosary, the—
  Single-flowered climbing Roses 289
Societies—
  Royal Horticultural .. 300
Sutton, Mr. Leonard .. 296
Tomatos, artificial manure for 297
Trees and shrubs .. 291
Unemployment, land cure for 293
Vegetables—
  Hybrid Marrows .. 298
  The Celery crop .. 298
War items 295
Week's work, the—
  Flower garden, the .. 292
  Fruits under glass .. 292
  Hardy fruit garden, the 292
  Kitchen garden, the .. 293
  Orchid houses, the .. 292
  Plants under glass .. 293
Wild Garlic, the eradication of 294
Winter-moth and banding of fruit trees, the 299

ILLUSTRATIONS.

Begonia Nancy 297
Bletchley Park. Buckinghamshire, views at 290, 291, 295
Cannell, the late Henry, portrait of 299
Carnation Wivelsfield White 289
Hydrangea Etincelant 298
Odontonia Magali Sander var. xanthotes 288
Philadelphus Girandole 296

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

IV.—THE FORBIDDEN LAND.

It is hardly possible to imagine the utter desolation of some of the valleys in Kansu. For days one may toil along the shores of a sullen river, hedged in by high hills all bare and brown and hard as a board, filmed with scant sere herbage, on which the only flower is the Asphodeline, like the ghost of a pale flame. The only oases are the villages embowered in vivid green most delicious to the eye and nose. Yet they are but poor little starving hamlets, for the greedy great range, now near at hand, though wholly invisible, cuts off all moisture from these lesser hills and their valleys, clothing the slopes in russet deadness, and so pinching humanity that half the population has died out of starvation in these last three years, during which no drop of rain has fallen. (We, however, brought it, and afterwards, if rumour be true, fire and sword in its train.) Such vegetation as subsists is far advanced: the one notable flower is a superb herbaceous plant about 2 feet high, which grows only in the hottest and stoniest places, and sends up a profusion of stems, clothed in ample feathered foliage, and each ending in a spire of Foxglove bells in a lovely clear shade of rose. It is obviously Incarvillea or Amphicome; only its luxuriance prevents me from indulging my belief that it is Incarvillea variabilis, which I have only so far known as a thing so unsatisfactory and grudging. In any case, even if parsimonious or untrustworthy in the open, unless in very arid and grilling corners of the garden, this plant should well be worth attention even under glass, no less for the amazing abundance and grace of its flower-spikes than for the brilliant, gentle cleanness of their colour.

In time, however, matters begin to improve. As we mount against the descending alpine stream gradually the sere strips of attempted culture diminish, and up the lateral valleys, and over the lesser hills, peer densely forested points clothed in solemn and enormous Firs, towering above a fleecy haze of umber and violet from the deciduous trees as yet in bud. A new little dwarf blue Iris here rewarded us, and Stephenandra with spikes of blossom like a flesh-pale Ribes sanguineum. But the glory of the golden Rose and of Dipelta, here at their zenith on the coppiced slopes, who shall attempt to describe? And Paeonia Moutan stands up rarely in blobs of moonlight amid the green, and then suddenly, barring the way, unfolds the wall of the world, the vast white rampart of Thibet, upholding the sky.

To the right curls the way of the Pass, winding up the woodland glens (with a red herbaceous Paeony in bud) till at last it begins to ascend in zigzags cruelly short and steep, continuing up an open slope like the walls of all the houses in England set on end. It is still too early for much to be seen in the alpine zone to which we shortly attain, but a rather squalid little white Anemone plays at being Ranunculus alpestris, and on open rough banks gleams a glorious Callianthemum with big many-petalled starry flowers of glistening white. Among it occurs another, with the foliage and habit of C. coriandrifolium (C. rutaefolium), but with apetalous flowers. Higher up, however, on the alpine turf, near the topmost ridges, this, too, develops flowers, these being the same as those of C. coriandrifolium, but intensifying in colour to a soft tone of blue. Otherwise, on these steep banks, sodden with half-melted snow, there were as yet no flowers, but over the whole expanse were pushing uncounted tufty masses of Anemone narcissiflora, in its fluffy villosissima form. A few yards higher yet, and we are in snow, with here and there small scrub of a wee Potentilla fruticosa, together with various small Rhododendrons, one with the bronzed little scented leaves of R. Anthopogon. Yet another promise, too, was offered by a densely-tufted Gentian with pointed, channelled, deeply glaucous foliage, and flower reported blue, but larger, shorter in the bell, and wider in the mouth than the G. Gentianella that it here replaces. It is not till you reach the highest ridge of all, and are dazzled by the icy glories of the peaks that fill the whole distance, that you come upon Meconopsis just beginning to emerge where here and there a loophole is melting in the snow. Here, at 10,650ft., it is far too immature to diagnose. I can only say that I have never seen a plant more plainly perennial in its solid massed mats of crowns.

On the other side of the Pass the scene changes. We drop immediately into a dense jungle of tall Rhododendron and Fir. All the wood is full of snow, and the almost vertical path is no better than an ice-shoot. Down and down we sink, oppressed by the solemn and immemorial silence that broods in the darkness of the forest. There are no flowers here, and that certainty is borne out by the discovery of a pale little indescribable bloom like something saprophytic that has been dead and embalmed for years. Then the slushy track turns a corner, and at once appears a Primula. But such a Primula, promising the affability and freedom of the Primrose, even as it has all the Primrose's habits, abounding in rich woodland soil, and on rotten wood, along by the path-side, and in all the more open places of copse or woodland between 6,500-9,000 feet. Indeed, its clumped crowns have very much the look of Primroses; but the leaves are smooth and lucent, and crisp and fringy with sharp teeth; from these arise stout little scapes carrying a wide, loose, and graceful head of Primrose-like flowers of tender lilac-rose with an elaborate white eye. When I found it the blossoms were quite scentless, but this may have been by reason of a recent fall of snow, as I came later on, and low down, on a plant of my Buddleia that had lost all sweetness for the time, though it proves quite magnificent, after all, in bloom, with huge compound panicles of lilac-blue that make the effect of Veronica Hulkeana at the end of its stiff, woody bough, on which the flannelly-toothed leaves develop later.

In the lower and more deciduous woodland abounded an Anemone indistinguishable from A. nemorosa, forming an unbroken carpet of snow-starred green, beneath the soft green light of huge old trees interarching overhead, and reaching down long arms all clothed with ancient moss, like those of furry monkeys. Adonis shone, too, amid the stones. Lilium giganteum was bronzy-brown in leaf, and Pachysandra soon covered the ground, as common as Dog's Mercury, and as ugly. In the moss a woodland Primula was in bud, and a very handsome purple Cardamine glowed everywhere, perpetually getting itself mistaken for its betters. Then more Anemones, more Lilies as we descend, and yet another alpine Primula, rare and rather poor, in wadded damp cushions on the rocks—probably an exile. So we descend, until we come to open ground again, and below coppices full of Dipelta more glorious than ever, and white Paeony, and a long-tubed little pink Lonicera of rare grace, and the sweet mottled Iris, and a microform of Primula obconica. So, finally, we arrive at the termination of our day's toil. *Reginald Farrer, May 12.*

---

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26 and October 17.

ORCHID NOTES AND GLEANINGS.

ODONTONIA MAGALI SANDER VAR. XANTHOTES.

It is a source of great interest to watch the persistence of fixed characters in spite of hybridisation. The knowledge of this possibility gives modern hybridists great advantages over earlier workers in the same field, for the operators of the present day know that much depends on the size, form, and colour of the subjects mated, and if due consideration is given to these points good results will follow.

With primary crosses this is a well-known fact; with crosses in which a species and a hybrid is mated the results vary, occasional plants even excelling the parents in beauty, while a proportion are of indifferent quality, and with crossing two kinds of mixed parentage the proportion of good flowers to the number of bad ones is even less, and sometimes the progeny are throughout bad. In fact, the production of latent characters and the suppression of recognised traits increases with the number of species which influence the new variety and their structural differences.

Albinism, or colour suppression, can generally be perpetuated either by setting the flowers with their own pollen or by crossing two true albinos, although the production of coloured progeny from two whites, probably with inherent colour factors, sometimes happens. In the present case of colour suppression in Odontonia Magali Sander var. xanthotes (see fig. 112) the rose markings of the original form disappear, the spaces being indicated by obscure pale yellow colour. The result was obtained by Messrs. Charlesworth and Co., Haywards Heath, by crossing Miltonia Warscewiczii alba and Odontoglossum ardentissimum xanthotes, both of which have the normal colours of their kind suppressed, and are in the nature of albinos.

It would be interesting to know whether all the plants of the cross are similar to the one noted or not. This novelty secured an Award of Merit at the meeting of the Orchid Committee of the Royal Horticultural Society on the 20th inst.

FLORISTS' FLOWERS.

EARLY CHRYSANTHEMUMS.

The present season has not suited early-flowering Chrysanthemums, the absence of rain and the prevalence of hot sun and drying winds during the greater part of the summer having caused the growth to be hard and unsuited for the production of good, early blooms. Also in many instances the plants suffered severely from frost late in May, causing a check soon after planting, and as a consequence many varieties are blooming later than usual. It is, however, interesting to note how well some of the older varieties have done even where planted on light, sandy soil and without having been watered. Varieties of the Mme. Marie Masse type have done well; in fact, these were almost the only varieties freely in bloom by the second week in September. Goacher's Crimson and its sports Goacher's Bronze and Mrs. Fielding are others that have given satisfactory results. Polly and its various sports are fairly good, but plants that were not disbudded did not make sufficient growth to show the blooms off to advantage. Mrs. Sydenham, a purple-crimson variety, is good, the upright habit of growth making it very useful as a border variety. Province, Gascoigne, Lorraine and Pluie d'Argent, all of which are, I believe, of French origin, are somewhat late in blooming, but their graceful form of flower stamps them as desirable varieties, and they are worthy a trial in pots. Diana and Crimson Diana are two good free-flowering varieties and suitable for massing in beds. The single varieties, though very free bloomers, do not make so good a show as the Japanese or reflexed varieties, though Firebrand and its yellow sport Golden Firebrand may be regarded as exceptions, the light, upright sprays being very decorative.

EARLY CHRYSANTHEMUMS AT HESTON.

The cultivation of early-flowering Chrysanthemums for the cut-flower trade has been somewhat revolutionised during the past few years, and this is partly due to the work of Messrs. Cragg, Harrison and Cragg, from whose nursery at Heston the market has been supplied with blooms of a quality which a few years ago it seemed impossible to obtain so early in the season. Raisers have devoted their attention to breeding varieties capable of furnishing what may be termed half-specimen blooms, in the open air or with just a little protection during the period the flowers are expanding. Notwithstanding the dry summer, the plants at Heston looked remarkably well in mid-September; the blooms of many varieties were opening well, and others were almost cleared from the plants. One of the earliest white varieties was Framfield Early White, and though this is not quite the largest of the white sorts it is much in demand on account of its fairly close form and purity. Mrs. J. B. Scott, an old favourite white variety, was especially good and a new incurved sport from it seemed likely to prove as good for market purposes as the parent.

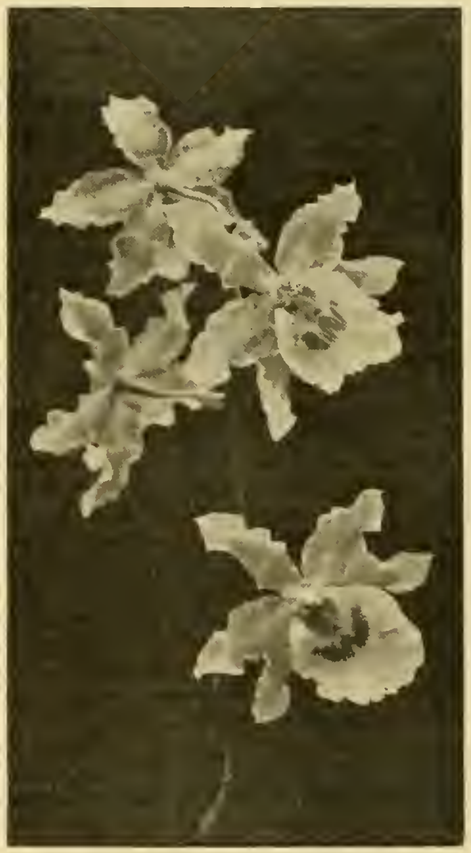


Fig. 112.—Odontonia Magali Sander var. xanthotes (reduced).

Debutante, raised by Messrs. Lowe and Shawyer, was also in good form; this is undoubtedly the cream of the early white varieties, and a large batch of plants in full flower is a most glorious sight. Heston Yellow is probably one of the deepest golden yellow varieties, and though somewhat difficult of cultivation, when in bloom it amply repays for a little extra trouble. Rosalind, a new variety of Messrs. Cragg, Harrison and Cragg, is of ideal habit, the flowers rosy-bronze in colour. The variety will doubtless become popular.

Cranfordia and Cranford Yellow are two varieties of excellent form which in their season are very difficult to supersede, though not so deep in colour as the before-mentioned. Juliet, a rosy-claret-coloured sport from Mrs. Lintz, was particularly good, and as this is one of Mr. Cragg's sports, he is justly proud of it. Cranford Pink was very fine in colour, and since it is one of the best of the pink varieties, both in form and colour, a bronze sport from it will be welcomed. Almirante, the well-known chestnut-red Chrysanthemum, is grown in quantity, both as disbudded blooms and as sprays, as also is Eldraco, this latter in the spray form appearing to give about the heaviest crop of flowers I have seen.

Among those cultivated for sprays were several varieties of the Masse family, Roi des Blancs and Polly, all of which appeared to have given good crops of bloom. Later varieties are cultivated in large numbers, and at the time of my visit they were being placed under glass. *T. Stevenson.*

FRANCE IN 1870.

The following is an extract from the *Gardeners' Chronicle* of February 11, 1871:—

"In order to get to Brussels from the South of France I was obliged to come to London, and in my journey I had the opportunity of seeing much of the ravages caused by this cruel war. Poor France, so hospitable to those who now overrun her so barbarously! You can have no idea of the devastation I have witnessed in my late journey. The majority of the French nurserymen, even in the uninvaded districts, have been well-nigh ruined from the drought of 1870, the severe frost, and the absence of trade. At Metz MM. Simon have had their nurseries destroyed, either by the march of Prussian troops or by the movements of the French soldiers encamped at Plantiéres. At Troyes one of the brothers Baltet had to leave his business in order to undertake the duties of officer in the Gardes Mobiles. His brother, who was a member of the Town Council, was sent into Germany as a hostage, and is confined in the casemate of Goerlitz, because the town, exhausted of its resources, could not meet the last requisition imposed by the Prussian prefect, Von der Stein. At Bordeaux M. Georges, professor of arboriculture, well known for his public services in the east and south of France, fell ill and died suddenly, as also did his young wife.

"Many other horticulturists have died in the field of battle or have lost their sons. The florists at Nancy, Rendatler, etc., are ruined; their plants are destroyed, their future rendered hopeless. Dr. Marjolin, of Paris, well known as a surgeon, and commemorated by the Rose and the Apple which bear his name, tells me that the establishment of MM. Thibaut and Keteleer, Sceaux, is utterly ruined. Similar disasters have befallen the Versailles nurseries, where MM. Bertin, Truffaut, Margot, and others have suffered the cruellest losses. At Versailles a number of fine trees, planted by Le Nôtre, have been cut down.

"Many of my botanical friends have still confidence in the future of France and are working with renewed zeal, certain that a country like France will never perish, even though pillaged, sacked and soaked in blood by hordes of savages. Such, at least, is the opinion of some of our botanists, who counsel courage and hope in the future supremacy of right and justice over brute force and falsehood.

"As to the frost in Limoisin, as far as Auvergne, the winter has been more severe and prolonged than has been known to be the case since 1829-30. Near Limoges, and even in that town, the thermometer indicated − 15° Cent. = 5° F. Snow began to fall on December 21 and covered the ground to a depth of 12 to 18 inches for more than six weeks.

"At Montpellier the thermometer has been as low as − 12° Cent. = 10° F. All the Bays were frozen. This has never been noticed in a district where the Phytolacca dioica is cultivated in the open air, as it is at Nice and at Saragossa. At Poitiers the frost was also severe. The Cherry and Portugal Laurels, the Phillyreas, the Bays, Euonymus japonicus, suffered slightly; the Viburnum lucidum, Garrya macrophylla, Mahonia japonica, Osmanthus and Ligustrum repens were killed to the roots. The losses at Limoges were much greater. Specimens from 20 to 25 years old of the following species were totally destroyed:—Magnolia grandiflora, Ligustrum ovalifolium, L. japonicum, L. chinense, Euonymus japonicus, Phillyreas, Ceanothus, Cotoneaster buxifolia, C. microphylla, C. thymifolia, Laurels of all kinds, Taxodium sempervirens, and even Ivy. At Niord the damage was less. At Angers nothing had suffered; the Camellias in the open air were full of buds, the large Magnolias of the famous avenue were as green as ever, as also the Japanese Azaleas, A. liliiflora, punicea, amoena, etc.; Passion Flowers, Phormiums, Ceanothus divaricatus, Chamaerops, excelsa were scarcely hurt; Fabiana imbricata, on the other hand, was killed. The climate of this place has maintained its old reputation.

"At St. Malo the same losses as in Poitou and the 'Deux Sèvres.' In Jersey (St. Helier) I found Phormium, Tritoma, Mühlenbeckia, Quercus glabra, Escallonia floribunda, Haemanthus, etc., destroyed. A plant of Veronica Andersoni, however, 15 years old, was unhurt. *Ed. André, Brussels.*

THE ROSARY.

SINGLE FLOWERED CLIMBING ROSES.

Single-flowering climbing Roses increase in numbers yearly, and as this section possesses a vigorous and graceful habit of growth with a free-flowering tendency, it is one that should not be overlooked by those interested in cultivating the best Roses. It being now planting season, I append a list of the best varieties known to me, including some that are new in gardens and some also that have been in cultivation for years. By climbing varieties I do not mean those that grow, say, 6 feet high, of the Trier and the newer Daphne type; these are dwarf pillar Roses; but rather sorts that grow 10 feet or more in height. While alluding to pillar Roses, I use the definition dwarf pillar Roses because all tall-growing sorts are pillar Roses when treated as such. When trained in this way they are more beautiful than when trained over pergolas or fences. A plant of Excelsa in the garden here is 12 feet high which was especially full of flower recently, all round alike. It is a form of training eminently suited to this variety. Another specimen of American Pillar is 14 feet high.

Selection of Varieties.

American Pillar (Conrad, 1909).—This variety is one of the best of garden Roses; the growth is vigorous, the flowers fully 4 inches in diameter, borne in huge clusters on stems 2 feet or a yard long. The colour is deep rose with a pure white eye.

Ariel (Paul and Son, 1910).—In colour this Rose is bright amaranth-pink with coppery-tinted buds. It grows strongly and has thick leathery leaves—an excellent variety.

Brunoni (known as the Himalayan Briar).—This plant grows rapidly and flowers profusely. The blooms are pure white with deep yellow anthers.

Carmine Pillar (Paul and Son, 1896) is the earliest Rose to flower; the colour is rosy-carmine.

Leuchtstern (J. C. Schmidt, 1900).—This plant is very compact in growth and of free flowering habit. The flowers are bright rose, with a large white eye.

Stella has rich carmine flowers, freely produced. The plant is of compact growth. A very desirable variety.

Coquina (Walsh, 1909).—This variety is of vigorous but elegant growth. The pretty pale pink blooms do not expand nicely out-of-doors; they seem so crinkled. As an early forcing Rose it may be recommended.

Evangeline (Walsh, 1907).—This is white, with the edges of the petals carmine-pink; very free in growth and flower. An excellent variety in every way.

Hiawatha (Walsh, 1905) is one of the finest single-flowered Roses grown; strong, yet compact in growth; flowers freely produced, and lasting a long time in a fresh condition. Scarlet, with deep yellow anthers.

Pink Pearl (Hobbies, 1913).—This variety represents a cross between Una and Irish Elegance. The ground colour is shell-pink flushed with salmon. It is effective and free.

Paul's Single White grows vigorously and flowers abundantly in clusters of pure white blossoms. If this variety is pruned hard back every year it can be treated as a bush, and in this way it flowers continually right into the autumn.

Macrantha has large blossoms of blush colour with deep yellow stamens.

Una (Paul and Son) has, perhaps, the largest flowers of any single variety. It has pure white petals and yellow anthers.

The Lion.—The flowers are rich crimson, but the habit of growth is indifferent.

Jersey Beauty.—A pale yellow Rose, very fleeting, but freely borne; of strong growth. A general favourite in spite of its short life. *E. Molyneux.*

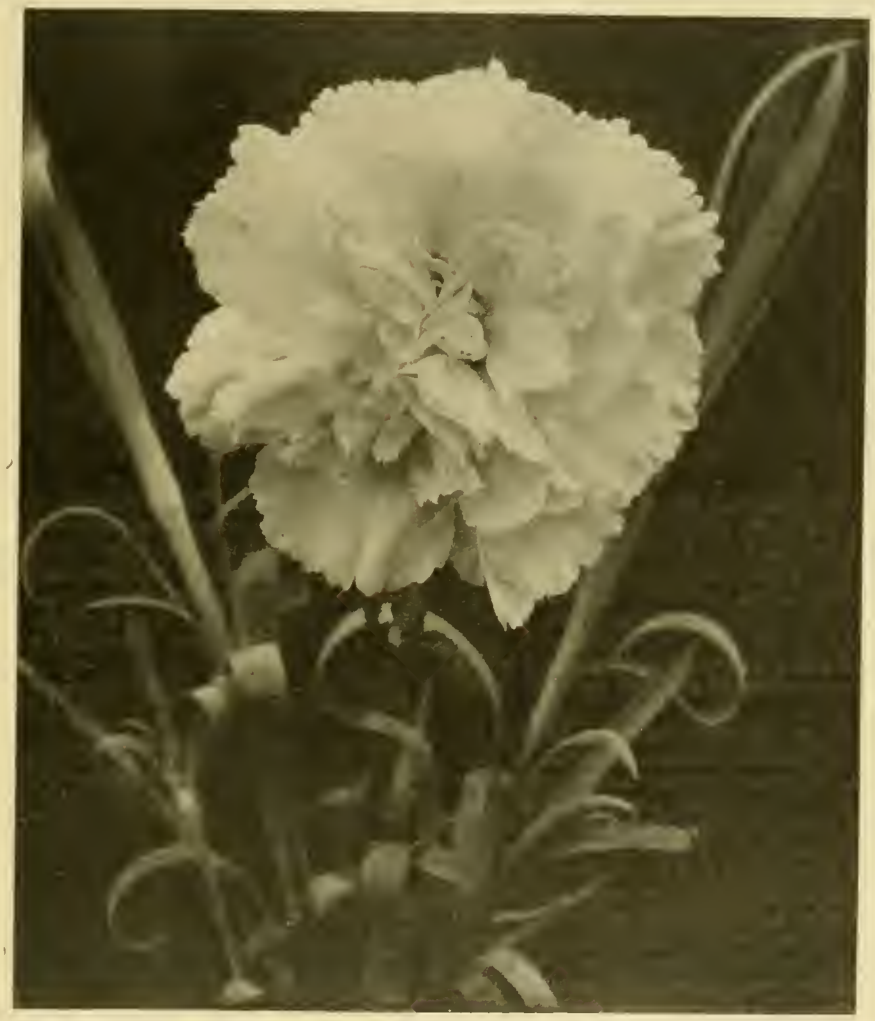


Fig. 113.—Carnation "Wivelsfield White."
(R.H.S. Award of Merit, October 20, 1914. See report of meeting on p. 281.)

BLETCHLEY PARK, BUCKS.

The picturesque village of Bletchley is situated in Buckinghamshire, on the main line of the London and North-Western Railway. At Bletchley station a private gate leads into Bletchley Park, the residence of Sir Herbert Leon, Bart., and Lady Leon. The chief entrance of the Park leads over a hill, through an avenue of very fine Elms, several centuries old; but from the station entrance the way is for about half a mile through the beautiful estate, which here consists of agreeable pleasure grounds and well-planned and tended gardens. The notice of the visitor is first attracted by a large sunken garden, occupying about an acre, encircled by a belt of trees and shrubs. The ground is laid out after a formal plan, with beds filled in spring and summer with bright flowers, intersected with regular paths. The centre of the garden is occupied by a large circular grass plot, in which are cut a number of beds of different designs (see fig. 115). In the middle of the grass-plot is a bed of fragrant Roses; around it are four panels, furnished in summer with double-flowered Marguerite Mrs. F. Sander and Ivy-leaved Pelargonium Mme. Crousse. There are also circular beds of Coleus Verschaffeltii, and scroll-shaped ones planted with golden Calceolarias and the silver-leaved Pelargonium Mrs. Parker. Some of the beds are furnished with Rambler Roses, trained over an iron frame of hemispherical shape; Roses are also trained on rustic poles. The varieties include Crimson Rambler, Dorothy Perkins, Trier and Philadelphia; they flower with the utmost freedom, and were just at their best at the time of our visit. The charm of the sunken garden is considerably enhanced by the beautiful belt of trees and shrubs which surrounds it. Conifers in many varieties flourish here, and fine specimens of Portuguese Laurel, Box, Laurus nobilis (Bay Laurel), Holly, and other evergreen shrubs. Through the trees a flight of steps leads to a lake, which is invisible from below, but at the top of the steps it is worth while to pause and look back at the beautiful view to be obtained at this point. The bright colours of the beds in the garden stand out in bold relief against the dark masses of the surrounding foliage; the graceful disposition of the trees, combined with their beauty of colour and form, yield an effect which is a striking tribute to the skill and care of the planter.

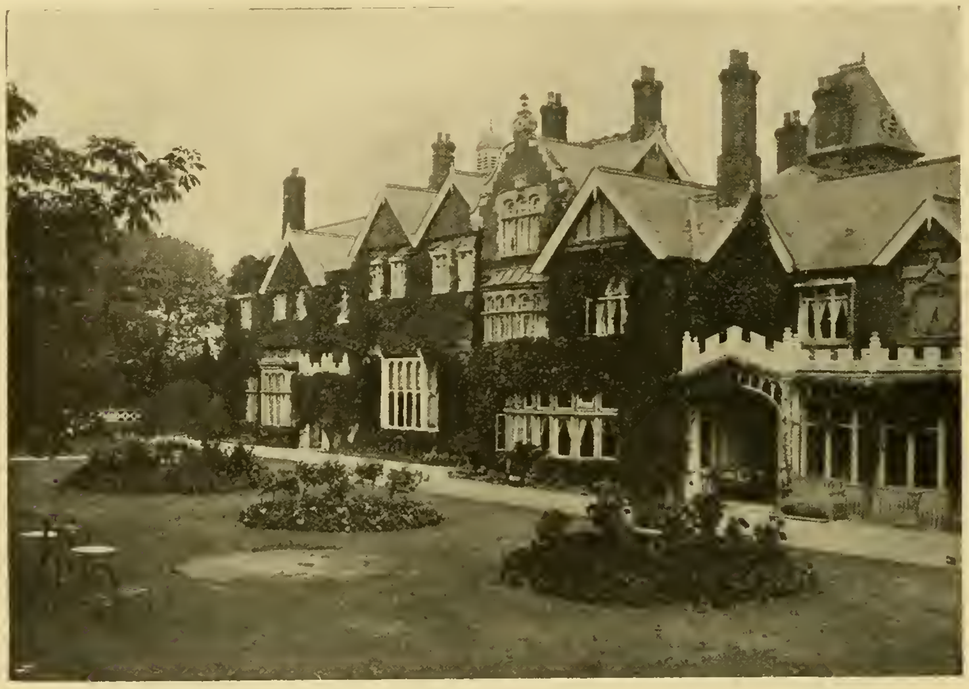


FIG. 114.—BLETCHLEY PARK, THE RESIDENCE OF SIR HERBERT LEON, BART.

The way to the lake leads past another enclosed garden, of a different character to that just left. It is almost hidden among the trees and shrubs, and occupies the position of what was once a rubbish heap! It is very tiny, but so charming that it well repays the trouble which has been spent on it and the inspiration which first conceived it. In the centre is a little pool with a marble fountain which was brought from Cairo—a fine specimen of ancient Egyptian craft and skill. Graceful Water Lilies inhabit the waters of the pool and reflect themselves in the still surface. The stone pathways which radiate from the pool are formed of irregular slabs, in the interstices of which low-growing alpines and old-fashioned herbs are cunningly planted. The little garden also accommodates a rockery, furnished with a variety of choice alpines, and a bed of Acer palmatum atro-sanguineum, whose rich, flaunting colour has this year assumed a particularly bold tint. The forest trees in this part of the grounds are very fine, chiefly consisting of Oaks and Elms. These form a background for Willows, Acer Negundo variegata, Prunus Pissartii, golden Yews, Hollies, Rhododendrons, Honeysuckles, and all the other flowering shrubs which give lightness and variety to a woodland scene.

The lake has an area of about an acre. The banks are steep, and in places overhung with trees; but one side has been shelved and the slope converted into a rock garden. The place is ideal for the purpose, and the plants luxuriate there and flower profusely. Many different species and varieties grow and flourish, those being preferred which form patches of bright colour, so as to be effective from the opposite side of the lake. At the top of the rockery festoons of Rose Dorothy Perkins lend brightness to the scene; when the Roses are in full flower the effect is extremely attractive. Near the lake is a croquet ground, surrounded by a border of shrubs, among which are placed at intervals tall plants of Hiawatha Roses. Over a Yew hedge the scarlet flowers of Tropaeolum speciosum climb in profusion. The hedge is aglow with the flame-like blossoms. We now return to the house, where, on a bank facing the front entrance, is a wonderful tree of Sophora japonica, with a spread of 40 feet. The plant was raised from seed brought from Washington by Lady Leon in 1897. We cross the lawn, pausing a moment to look at a very natural-looking mass of large boulders backed by a Yew hedge. These boulders are of artificial "Pulhamite" stone, but they resemble rock, with fissures and crevices such as would be made by running water. Along the foot of the group are planted such dwarf spring-flowering plants as Aubrietias, Saxifrages and Crocuses, the cracks and crannies being filled with small plants. At the back are climbing Roses and Polygonum baldschuanicum, which comes into bloom later. Facing the south front of the house is a raised lawn, in which are beds of Paul Crampel Pelargonium and Heliotropes, and everywhere a wealth of Roses. The lawn is screened by a tall shrubbery border, in which there are some beautiful fastigiate Conifers, chiefly Cupressus Lawsoniana erecta glauca. Four fine plants of Dorothy Perkins Rose, trained as weeping standards, provide an attractive touch of colour; but the choicest Roses are in the rosary, which is close to the lawn, the way leading through an archway covered with Rose Hiawatha. In the centre of the Rose garden are a stone dolphin and cherub; surrounding it is a hedge of golden Yew, with variegated Box and Laburnums to give variety, the latter hanging its golden chains from every twig in the spring. The chief Roses cultivated are dwarf forms of Richmond, Lyon, Mrs. Aaron Ward, Mme. Abel Chatenay, and Elizabeth Barnes, all of which flourish and flower very freely. Roses, however, are not the only flowers grown in this snug garden; Calceolaria Golden Gem has a place of its own here and does remarkably well. This same variety is also planted close to the walls of the house, in a shady place, and succeeds equally well.

At some distance from the house, a portion of the pleasure grounds has recently been made into an Azalea garden, chiefly occupied by Ghent hybrids. This garden has been a great success; the spring brought a profusion of flowers, and judging by the appearance of the plants, they should do equally well next year. Near the Azalea garden is a sylvan "dell" of fascinating beauty; many of the trees and shrubs are finely branched and thinly planted, thus permitting the sunlight to shine through and illuminate the glades beneath. In the border illustrated in fig. 116 are four bold plants of Euphorbia Wulfenii and several globular golden Yews, underneath which flowers are growing in the grass. A little beyond this is the maze (fig. 117), which is an interesting example of its kind, the Yew hedges, furnished with dense growth to the ground level, being clipped and trimmed with marvellous exactitude.

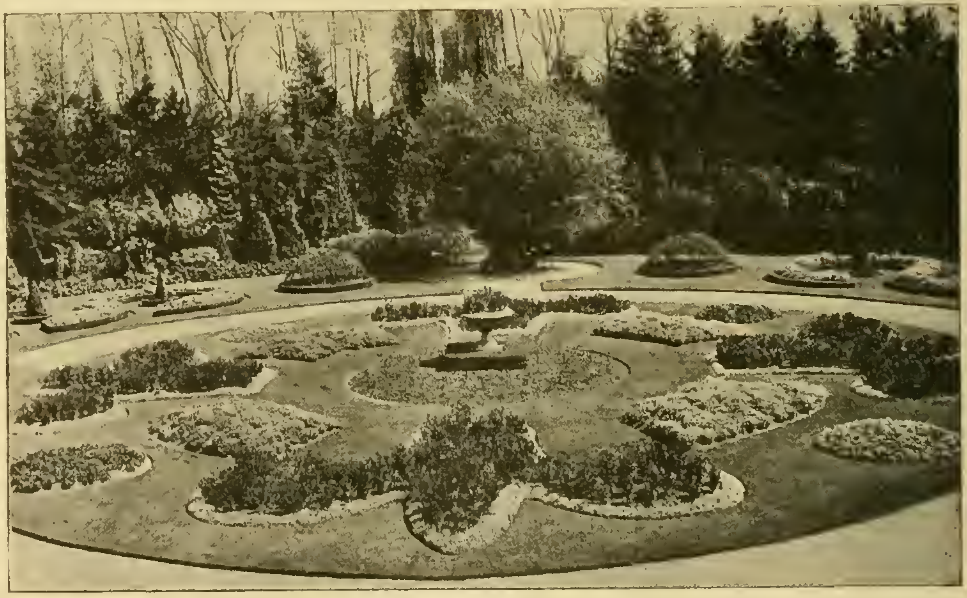


FIG. 115.—THE SUNK GARDEN AT BLETCHLEY PARK.

KITCHEN GARDENS AND GLASSHOUSES.

The same admirable care and skill which are displayed in the management of the pleasure grounds are to be seen in the kitchen gardens and glasshouses, which cover an area of four acres.

There are no fewer than thirty-four thoroughly up-to-date glasshouses, with a large fruit room, offices for the gardener, and a well-appointed bothy for the young gardeners. All kinds of tender fruits and flowers are grown. In one house we saw the last of a batch of Souvenir de la Malmaison Carnations, which represented part of a stock of 1,500 plants. Besides these, about 2,000 Tree Carnations are grown, and the supply of these flowers is unfailing throughout the year.

Mr. G. Cooper achieves great success with indoor fruit, and won 1st prizes for fruit at the recent Leamington show in all the classes in which he competed.

The Banana does well in a tropical house, in which Palms are also grown; the bunches of Bananas are much larger than those usually imported. The Vines, Peaches, Figs in borders, and Melons all crop well and produce choice fruits. There are several greenhouses filled with decorative plants; in one, the central stage is filled with Statice profusa, White Petunias and Trachelium coeruleum. On the side stages are plants of Pelargoniums Achievement and King of Denmark. Passing through a stove house of Codiaeums (Crotons), Dracaenas, and other fine foliage plants, the Palm house is reached. Another house contains Gloxinias, Acalypha hispida, the pretty blue-flowered Exacum affine, Begonias and Streptocarpuses. Through this house is the Fernery, illustrated in fig. 118. Among the Ferns shown in the illustration are :—Woodwardia orientalis, Todea superba, Pteris quadriaurita (syn. argyraea), and species and varieties of Asplenium, Lomaria, Davallia, Nephrolepis, Blechnum and Gymnogramme. There are also a few Tree Ferns, including good plants of Dicksonia and Alsophila.

Begonias of the Rex type find a home in the fernery, and in summer time baskets of Begonias are suspended from the ridge-plate of the roof. Mr. Cooper is especially successful in the culture of Crassulas, and one large house was aglow with the scarlet blossoms, mingled with those of Statice Suworowii and Nemesia Blue Gem. There is a whole range of Orchid houses, in which the plants chiefly grown are Laelias and Laelio-Cattleyas, as most suited for decorative purposes. Mr. Cooper has crossed many of the varieties, and has a large batch of healthy seedlings.

Bletchley Park is open for the inspection of the public on August Bank Holiday, which is the occasion of the local flower show. Upwards of 20,000 people generally make a tour of inspection on that day.

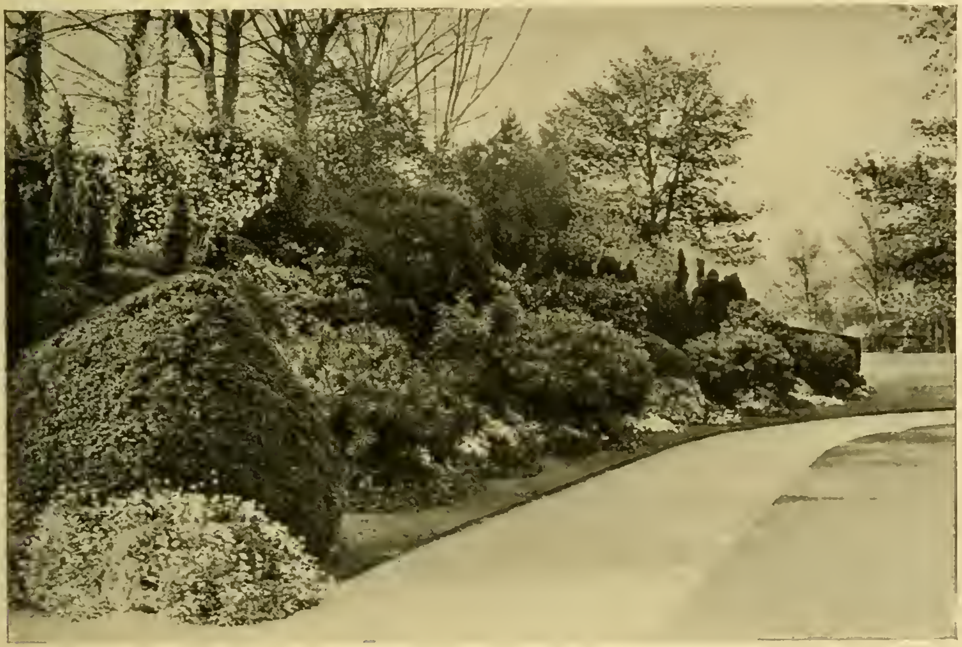


Fig. 116.—Rock border and shrubbery at Bletchley Park.

FARM PRODUCE FOR HIS MAJESTY'S FORCES.

1. The Board of Agriculture and Fisheries are taking steps, in consultation with the War Office, with the object of facilitating the purchase by the military authorities of farm produce, such as forage and vegetables, direct from the farmer.

2. With this object in view the Board have appointed an Organising Committee, consisting of the following :—Mr. H. Trustram Eve, Secretary to the Farmers' Club (chairman); Mr. E. J. Cheney, Assistant Secretary, Board of Agriculture and Fisheries; Mr. A. H. H. Matthews, Secretary to the Central and Associated Chambers of Agriculture ; Mr. T. McRow, Secretary to the Royal Agricultural Society of England; Col. H. Godfrey Morgan, C.B., D.S.O., Assistant Director of Supplies, Central Force; Mr. H. W. Palmer, Secretary to the National Farmers' Union; Mr. Clement Smith, member of the Agricultural Organisation Society and of the Farmers' Central Trading Board; Mr. R. J. Thompson, Board of Agriculture and Fisheries. Secretary: Mr. A. Dunbar, 16, Bedford Square, London, W.C.

3. There will be set up for each county, or, in certain cases, for groups of counties, a farm produce county committee consisting of eight tenant farmers of recognised standing who will be nominated jointly by the Presidents of the Royal Agricultural Society of England, the Chairman of the Farmers' Club, the Chairman of the Central and Associated Chambers of Agriculture, and the President of the National Farmers' Union.

4. A County Committee will elect their own chairman, and may co-opt not more than four other persons as the nominated members may decide.

5. A County Committee may appoint, as may be considered necessary, a Sub-Committee of not more than three farmer members for each of the districts served by the minor market towns of the county. The Chairman of each Sub-Committee must be a member of the County Committee.

6. A County Committee will meet on a fixed day in each week, when they will discuss and settle the prices for the ensuing seven days at which farmers and others in the county might be reasonably expected to dispose of their farm produce for the use of his Majesty's Forces. A County Committee will also invite farmers to submit samples and to quote prices for the various classes of produce which the military authorities may desire to purchase in the district.

7. A Purchasing Officer of the Army will attend, whenever possible, the meetings of the County Committee and of the Sub-Committee, and will intimate beforehand, as far as practicable, the classes and quantities of produce he desires to purchase. The County Committee will invite farmers to attend the meetings in order that they may submit their offers for the consideration of the Purchasing Officer.

8. The War Office have undertaken to purchase, as far as practicable, through the County Committees, but necessarily reserve the right to refuse offers which the Committee may obtain, in cases where the Purchasing Officer can make better arrangements elsewhere.

9. The County Committee have discretionary power to make arrangements with any agricultural co-operative association or other body of organised farmers, for the purpose of assisting them in any but their advisory work.

TREES AND SHRUBS.

THE SHRUBBERIES.

Shrubs and shrubberies should receive attention at this time, for if a little labour is expended on them during the autumn much annoyance is saved in the winter.

Long, straggly shoots should be shortened or totally removed. The shrubs may be pruned now with advantage. The removal of superfluous growths prevents the snow when it comes from damaging them.

Many people carefully rake off the leaves from the shrubberies and store them in some odd corner. No doubt this is through a motive of tidiness; and if the shrubberies are in full view from the paths or the drive tidy up by all means; but if the shrubberies are not very prominent I suggest that the leaves should be left on till one has time to dig them in. Shrubberies should be dug over regularly each autumn. It must be done thoroughly when it is done, and the ground enriched with some material.

There is no better medium to dig in than leaves (except those of the Plane), and there are usually plenty on big places. Dig over one spade deep and put some leaves in each trench. In thickly-grown shrubberies it is important not to damage the roots when digging. To avoid this a fork should be used and plenty of leaves dug into the parts near the roots. But do not dig in Pine needles. Some people use animal or vegetable manure for digging in during the autumn, but it is a mistake. Do not use manure in the autumn, nor apply a top-dressing of it to newly-planted shrubs, but use it in the spring by all means as a top-dressing or to dig in. Where peat from the moors is obtainable it is a good plan to use this either alone or in connection with manure, as shrubs, especially Rhododendrons, are very fond of it.

Generally speaking, it is a good plan to forbid the lime bag coming near the shrubbery. Most of these plants thrive very well without it, and some, like Rhododendrons, abhor it. And in speaking of lime I, of course, include all chemicals containing lime—viz., gas-lime, carbide refuse and mortar rubbish.

After a fall of snow it is advisable to go out in strong boots and with a heavy coat, armed with a long pole. With this knock off the snow from the shrubs, raising the shoots with it. Otherwise they may be damaged. This also applies to Pines, Firs and Wellingtonias. The job is a wet one, but very necessary. *E. T. Ellis, Weetwood, Ecclesall, Sheffield.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Cattleya citrina.—This Orchid is in full growth and producing roots from the base. The plants will require a liberal but not excessive amount of water. When the pseudo-bulbs have matured the plants must be kept dormant for the winter, therefore very little root moisture will be required. But as soon as the flower-scapes appear in the late spring the roots need liberal quantities of moisture again. This species, like most Mexican Orchids, requires a prolonged resting period; and as it grows wild at a high altitude, it does not need much heat at any time, but plenty of light is essential and ample ventilation. It is a great mistake to grow it in very warm houses. The cool intermediate house suits the plants best when growing, but during the resting period a lower temperature is desirable, with ample ventilation. The plants are best grown on charred blocks of wood or in teak-wood baskets. A little peat and Sphagnum-moss may be used in the compost, but a very little bulk of potting material should be employed. Plants that require re-potting should be attended to whilst the roots are in active growth and before they become far advanced.

Cypripedium. Many Cypripediums are flowering freely and the spikes may be used as cut blooms. Plants of C. Leeanum may remain in a dwelling-house for weeks at a time, and if not over-watered no apparent injury will ensue. The flower-buds of this Orchid are prominent on many plants, and, with the shortening days, the plants should be exposed to sunlight, shading them only when absolutely necessary. Plenty of fresh air should be admitted through the top ventilators whenever the outside conditions are favourable, leaving the apertures open a little at night in mild weather. This cool treatment prevents the leaves from becoming drawn and gives general robustness to the plants. Continue to water the roots liberally, for if the plants are permitted to become dry whilst carrying the flower-buds the expanded flowers will show but very little colour. As the flowers advance place a neat stake in position, but do not tie the spike to it until the flowers begin to expand.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Quinces and Medlars. — Examine the fruits, but do not pick them until they are fully ripe. Quinces should be stored in a cool room or cellar, when they will be fit for use in a few weeks. Medlars are usually ready for picking at about this date. Choose a day when the fruit is thoroughly dry, as the rough skin holds moisture, and if the fruits are stored when damp they soon decay. Place them in a thin layer and examine them at short intervals; when ready for use they are quite soft.

Bush Fruits.—Cuttings of bush fruits should be transplanted each season until they are placed in their permanent positions. Two- or three-year-old plants are a useful size for making a new plantation. The possible depredations of birds should be borne in mind when selecting a site for the bushes, so that protection can be afforded, especially in the case of Gooseberries. Tits and bullfinches often destroy the buds in spring, and if not kept out by netting or some such protection the crop may be ruined. In the culture of small fruits it is advisable to enrich the ground with manure more liberally than for Apples, Pears, Plums or Peaches; but if the proposed site has been for some years well cultivated for vegetables the ground will need very little preparation beyond clearing it of weeds and levelling the surface. Otherwise the ground should be trenched and manured liberally at once, leaving the surface rough for a short time. If the ground has been trenched for some time it will have settled by now and be suitable for planting; but if the trenching has to be done now the ground must be levelled and trodden by the foot firmly before beginning to plant. Small fruits do not require a special soil, for they succeed almost anywhere, but the ground must be well drained. The most profitable plan to follow for the main crops of Currants and Gooseberries is to plant a quarter in the open with bushes, and in addition to grow both kinds on cool walls or on trained wires as cordons. Red and White Currants succeed admirably on north walls, and growing in such a position the season of ripe fruits is prolonged. Late varieties of Gooseberries of the Red Warrington type should also be grown on cool walls; but fences in an open situation are probably the best places for growing choice dessert Gooseberries. A convenient plan is to train cordon Gooseberries on wires to form an enclosure for the remainder of the bushes. The uprights serve as supports for the netting over the bushes in summer. Young Gooseberries grow rapidly, and unless it is intended to take out alternate plants after a year or two it is of no advantage to plant closely. It is better to fill up the intervening space with small vegetables and salads for a few seasons. A distance of 6 feet between the bushes should be allowed, so that proper attention may be given to the plants and to the cleaning and hoeing of the ground. Black Currant Boskoop Giant may be recommended, being of strong and healthy growth and usually bearing heavy crops of large berries. Lee's Prolific and Black Naples are also reliable varieties. The Comet, La Versailles, Red Dutch and La Constante are standard varieties of Red Currant, ripening in succession, the later ones hanging until well into the autumn. White Versailles and Transparent are two good White Currants. In planting Gooseberries the question of varieties must be governed by individual requirements. For dessert purposes a number of early mid-season and late varieties should be planted in various situations in order to prolong the fruiting season. For market culture such varieties as Whinhams, Industry and Warrington should be selected.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Evergreen Trees and Shrubs.—Hollies, evergreen Oaks, and other tap-rooted shrubs may be transplanted. See that the ball of soil and roots are moist before commencing the work of lifting, as success depends largely upon this important detail. In re-planting make the soil firm. Too much importance cannot be attached to the value of autumn planting over winter or spring planting.

Marguerite Mrs. F. Sander.—This plant makes excellent specimens for pots, tubs, or vases. Its fine, pure white flowers make it very effective, whilst as a bedding plant its qualities are not less pronounced. It requires similar treatment to Calceolaria amplexicaulis, but if stock proves to be scarce cuttings rooted in spring will succeed equally well.

Formal Garden.—All tender plants that have been seriously injured by frost should be removed. About half the growth of tuberous Begonias may be cut off, and the tuber taken up with a small ball of earth attached. The tubers should be placed singly on the floor of a cool vinery or Peach house at rest, so as not to dry too rapidly. If ripened off gradually, the corms will remain fresh and plump, and in a month or so may be safely stored away in dry sand or earth. Specimens of the fibrous-rooted section may be pulled to pieces, placed in pans, and kept in a light position in a warm house until growth is re-established. Make sure that the stocks of cuttings are healthy, and that sufficient cuttings have been struck for next season's requirements; otherwise retain a few old plants in reserve. The spring-flowering plants have done well, and their removal to the beds should be carried out with as little check as possible. Such plants as Wallflowers, Forget-me-nots, Alyssum, Polyanthus, Arabis and Aubrietia should be lifted with a hand fork and carefully transferred by hand to the beds. If Tulips, Hyacinths, and other bulbs are used in conjunction with the plants above named, they should be put in at once with a blunt dibber, so that the base of the bulb rests on solid ground, and planted about four inches deep, using no fresh animal manure. All rubbish should be cleared away from the formal garden, and the surroundings kept as neat as possible. Lawn-mowers may be thoroughly cleaned, the bright parts oiled, and any necessary repairs seen to before storing the machines.

Autumn Tints.—A selection of foliage shrubs for autumn effect should be included in every large garden. Rhus Toxicodendron, Amelanchier canadensis, Japanese Maples, Euonymus europaeus, Ginkgo biloba (Salisburia adiantifolia), the common Guelder Rose, Liquidambar styraciflua, Berberis Thunbergii, Aronia floribunda, and many species of Crataegus all assume beautiful colours in autumn.

The Rose Garden.—In addition to the planting of Roses in beds as previously advised, the planting for pergolas may be completed. Tree stumps, fences and steep banks, or any places where turf fails to grow satisfactorily, form opportunities for the planting of Roses of the Wichuraiana type, which may be allowed to ramble at will. These Roses require no pruning beyond the removal of weakly growths to prevent crowding. They make shoots 10 to 15 feet long in a single season and the fragrant flowers are freely produced. The foliage is very dense and always free from mildew. The varieties Jersey Beauty and Gardenia flower early; Dorothy Perkins, Hiawatha, Excelsa and Lady Gay bloom later. A place should also be found on pergolas or old tree stumps for Madame Abel Carrière, W. A. Richardson, American Pillar and Félicité Perpêtue.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Pineapples.—Continue to treat the plants as advised in the calendar for September 19, but reduce the temperature two or three degrees. Fire-heat is only necessary to counteract damage from damp and cold, the roots in particular being susceptible to injury from these causes. A circulation of air is absolutely necessary when the climatic conditions are favourable, whether the plants are in a growing or semi-dormant condition. But when they have been re-potted and new roots are forming, a warm, humid atmosphere is best. The amount of water afforded the roots should be reduced gradually, and there should be a corresponding decrease in damping overhead. Some of the plants will only require a very little moisture at long intervals, and the grower should study the condition of the soil carefully, it being better to keep it on the dry rather than on the wet side.

Strawberries.—Plants that have been prepared for forcing early should be placed in cold frames or pits, where protection from heavy rains can be afforded. The roots should always be kept moderately moist. Remove all decayed leaves, and see that the drainage in each pot is perfect. In fine weather remove the lights during the day. A little frost will do no harm, but the soil should not be allowed to become frozen. Plants intended for the main or late crop should be plunged below the rims of the pots in ashes or other suitable material out-of-doors, selecting a position fully exposed to the sun or beneath the shelter of a south or west wall, where slight protection may easily be given during severe weather or a heavy snowfall.

Figs.—Pot trees that are to produce the earliest supply of fruit in the forthcoming season should be protected from autumn rains by placing them in a rather dry and well-ventilated house, where the trees will be kept cool, yet preserved from frost. The thinning or shortening of weakly growths should be done forthwith, care being taken to retain only such wood as is well matured. The trees should be washed with an insecticide such as was recommended for Peaches in a former calendar, care being taken in its application at the extremities of the shoots, where the embryo fruit is located. Should the usual top-dressing of the roots have been omitted during the earlier part of the season, a top-dressing should be applied directly the trees have been pruned and cleaned. Planted-out trees that have been in bearing during the greater part of the summer should now be allowed comparative rest by reducing the supply of moisture at the roots, and those trees which during the past summer have made extra strong growths, and therefore require root-pruning, should be dealt with forthwith before all the leaves have fallen. At that time take the opportunity of seeing that the drainage of the border is in good condition, and also of replacing a part of the old soil with new, freshly-cut turfy loam, to which a good percentage of broken bricks and lime rubble has been added, making the whole firm about the roots as the work proceeds. If the soil used is in a fairly moist condition water at the roots may be withheld for a few days or until the new soil has settled about the roots. For the present afford ample ventilation to the trees throughout the day and night.

Watering Inside Fruit Borders.—If Peach borders are allowed to suffer from want of moisture at this time of the year the result will be seen in bud-dropping when heat is applied for forcing the trees into growth next season. All fruit borders should be carefully examined before the leaves have fallen from the trees, and any that show the slightest signs of drought should have sufficient water applied to penetrate to the drainage. Where the roots of vines or Peach trees can ramble outside as well as inside they are easily managed; at the same time, the evils of overfeeding or overwatering must be carefully guarded against. Even with good drainage the soil will sometimes become clogged, which will prevent the Grapes colouring properly, and cause Peach trees to be productive of unripened wood, with ultimately a falling off and failure of the crops. The evil in the opposite direction—excessive drought at the roots—produces prematurely ripened wood, indifferent fruit, and red spider. If one man is more to be trusted than another in the fruit department, it is the man who can be depended upon to water an inside border properly, as only wetting the surface sooner or later proves to be a deception, for when once the surface of the border is wet all over no one can determine what quantity of water has been used, neither will the length of time a man has been employed at the work be a safe standard to go by. Well-cared-for borders should never be allowed to lack water until the foliage begins to flag, even at this time of the year, or the crop in the following season will be seriously affected. Autumn watering is sometimes either carelessly done or entirely neglected, yet nothing short of moistening the whole of the soil in the border will safely carry the trees through the autumn and early winter months.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby,
Knowsley Hall, Lancashire.

Palms.—Plants that have been utilised for decoration during the summer months in corridors, conservatories, verandahs, etc., should be removed to a warm house, preferably by themselves, where they can be syringed often. Make a thorough examination of each plant for the presence of scale insects, which should be removed with a sponge and soapy water. It is not the best time to disturb the roots; if the soil is poor occasional dustings with Standen's manure will help to keep a good colour in the foliage. Established plants should be grown in a temperature of 60° to 65° at night. Stand young plants at the warmer end of the house or in a stove.

Eranthemum pulchellum.—Established plants may be fed with weak tepid manure water. Place them close to the roof-glass, for plenty of light results in short-jointed growth that flowers freely. Plants of later batches should be grown on without a check, in a temperature of 60° at night. One-year-old plants may be cut back after flowering, rested partially, and then grown on for a second season.

Shrubs for Forcing.—Shrubs that have been forced in former seasons and afterwards planted in the reserve garden should be prepared for potting, removing all useless and dead shoots. Two seasons at least should elapse before shrubs are forced a second time. Such as are ready may be potted, plunged in a bed of leaves or coal ashes, and watered afterwards. They may remain out-of-doors for the present. The following shrubs are all suitable for the purpose:—Rhododendrons, including Azaleas, Deutzia gracilis, D. Lemoinei, Lilacs Madame Lemoine (double white), Marie Legraye (single white), Philadelphus, Staphylea colchica, Viburnums, and Spiraeas Gladstonii and Peach-blossom.

Chrysanthemums.—Continue to feed the plants with manure until the flowers are half developed. Water the plants during the morning so that excessive moisture may be dried up before the evening. Plants in houses do not require much water if placed closely together, as they will not then dry quickly. In foggy or wet weather a little warmth from the pipes may be employed, at the same time admitting plenty of air to keep the atmosphere dry and thus prevent mildew. The wood is well ripened and the flowers promise to be of a high quality.

Greenhouse Rhododendrons and Azalea Indica.—The plants should be examined carefully before applying water. If moisture is required saturate the ball of the plant with rain-water, which contains no lime. Feed the roots with weak liquid manure as soon as the flower-buds are formed. Fumigate the house to destroy thrips and Aleyrodes vaporariorum (white fly).

Euphorbia (Poinsettia).—The earliest plants of Euphorbia pulcherrima, known in gardens as Poinsettia, are showing their bracts, and will benefit by a higher temperature and plenty of sunshine. A temperature of 70° to 75° at night is suitable for them. Ventilate the house when the thermometer rises to 90°, closing the apertures early in the afternoon to retain sun-heat. Damp the paths and stagings until the bracts are expanded, when the plants may be placed at the warmer end of the conservatory, mixed with flowers and foliage the colours of which will blend with their own. E. jacquiniaeflora, planted in borders, should be secured by tying the shoots to the wires suspended from the roof. By this method large quantities of flowers are obtained from plants several years old.

Lilium.—Retarded plants intended for flowering at Christmas are making growths of sufficient length to permit of them being top-dressed. Remove the best rooted plants to an intermediate house or pit, and top-dress them with a compost composed of equal parts loam and dried cow manure, broken small. Secure the growths to stakes, and syringe them daily. Bulbs that have not been retarded may be shaken clear of the old soil. Select the best specimens, placing four or five in a 10-inch pot, or three in a 7-inch pot. The receptacles should be well drained and half-filled with good turfy loam 1 part, and peat and leaf-soil ½ part. Sprinkle sand under the bulbs and fill in the soil firmly around them, just covering them and allowing space for future top-dressings. Plunge the pots in a frame and withhold water until growth commences. Cover the pots with mats, and protect them from frost. These directions apply more particularly to L. speciosum (lancifolium). L. auratum should be planted singly in pots 7 inches in diameter.

Soft-Wooded Plants.—Such plants as Cinerarias, Humeas and Primulas should be transferred to their final pots as soon as they need increased room. They should be grown in span-roofed pits where a little fire-heat may be employed on frosty nights. In favourable weather admit air freely. The earliest plants are coming into flower, and will be benefited by weak soot-water alternated with liquid manure. Fumigate the pits lightly every third week to destroy aphis.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of
Haddington, Tyninghame, East Lothian.

Jerusalem Artichokes.—The stems may be cut close to the ground, and when they are dry burned to make wood-ash. There is no hurry to lift all the tubers, but it is advisable to raise sufficient to meet the demands for some little time, not only because frost or rains may render the soil unfit for working, but it effects a saving of time. Parsnips, Rampion, and Salsafy may be treated in the same manner, keeping the roots well covered in a cool shed until they are wanted. A supply of Horse Radish to last a long time should also be lifted and the roots stored in sand.

Manure.—For many crops animal manure that has lain in a heap longer than six weeks, or long enough to become semi-decayed, is of more value than when comparatively fresh. The heap may be protected by a layer of soil, and strengthened by any liquid of a manurial nature poured over it from time to time. Material other than animal manure has much value. Very old practitioners called this compost, and to produce compost all kinds of rubbish from the garden, the house, and outhouses was heaped together, fermented by means of applied liquids, and, when decayed sufficiently, incorporated with the soil. Material of this sort is very valuable when reduced to the consistency of rough soil, and it is all the better if mixed with quicklime. The heap should be turned and mixed once or twice previous to using it. Nor am I certain that its utmost value is secured by digging it into the ground, rather it seems to afford the greatest effect for good when spread over the surface among crops to the depth of about two inches. All sorts of readily combustible material, and that which does not decay quickly, should be burned and the ash used as manure. The sweepings of poultry houses may also be used as a fertiliser.

Brussels Sprouts.—Yellowed foliage has been prevalent among Brussels Sprouts this year, no doubt on account of the long-continued drought. But the plants generally are strong and abundantly furnished with small, hard sprouts. They will continue in bearing for a very long period if care is taken to pick the Sprouts regularly, but gather only those that are ready. It is a mistake to remove the tops of the plants, tempting though they be, as by doing so the number of sprouts is lessened and the period of production shortened considerably.

Onions.—Autumn-sown Onions should receive a final weeding, for the weeds, though tiny at present, would overgrow the Onions before the spring. Finish the work by neatly hoeing bare surfaces and cleaning the alleys with the spade. Garlick may be planted, setting the cloves a few inches asunder in rows 12 inches apart. Some cultivators divide Chives which have become matted at this season. For this vegetable 6 inches is a fair distance between the sets, or they may be planted as an edging to beds of other herbs.

Globe Artichokes.—Before all the fallen tree leaves are removed set aside a sufficient quantity to protect Globe Artichokes during the winter, or they may be placed at once about the plants, a sprinkling being inserted in the centre of each. Cropping is practically over for the season, and any "heads" that are still in situ should be cut. The cut ends of the stems should be kept damp in order to prevent the heads wilting. Another method is to press the ends into sand which has been steeped in water, placed in a shallow box, and left until it becomes firm.

Turnips.—Turnips may be lifted and stored for use, but they may also be preserved from frost by merely drawing soil over the bulbs in the rows. If left in this way those that are not used produce young leaves which are useful as a green vegetable in spring. Half-grown bulbs from the sowing made in August should be treated in the same manner. These young Turnips provide a useful vegetable in winter. Swedes are so hardy that they may be left in the ground until growth ceases and then lifted and stored, or they may be pulled, placed in a heap, and covered with straw; a few spadefuls of soil here and there on the straw will keep it in position when the weather is rough.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

APPOINTMENTS FOR NOVEMBER.

[*In the following list of Appointments for November we have omitted the Chrysanthemum Shows which we have reason to know have been abandoned. It is possible that some of those enumerated may not be held, although we have no information to this effect.*]

TUESDAY, NOVEMBER 3—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Good Books for Amateurs, Gardeners, and Libraries.") Southampton Chrys. Sh. (2 days). West of Eng. Chrys. Sh., Plymouth (2 days).

WEDNESDAY, NOVEMBER 4—
Nat. Chrys. Soc. meet. at Essex Hall, Strand. Putney Chrys. Sh. (2 days). Northants Chrys. Sh. (2 days). Bromley Chrys. Sh. (2 days)

THURSDAY, NOVEMBER 5—
Colchester Rose and Hort. Soc. Sh. West Suffolk and Bury St. Edmunds Chrys. Soc. Sh. (2 days). Linnean Soc. Meet.

FRIDAY, NOVEMBER 6—
Eccles and Pendleton Chrys Soc. Sh. (2 days). Corn Exchange Chrys. and Fruit Show. Derbyshire Gard. Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 7—
Formby Hort. Soc. Chrys. Sh.

MONDAY, NOVEMBER 9—
Gloucestershire Soc. Sh.

TUESDAY, NOVEMBER 10—
Ulster Hort. Soc. Chrys. Sh. at Belfast (2 days). Dover Hort. Soc. Chrys. Sh. (2 days). Woolton Chrys. Sh.

THURSDAY, NOVEMBER 12—
Sheffield Chrys. Sh. (3 days). Nottingham Chrys. Sh. (3 days). Colchester Chrys. Sh. Edinburgh Chrys. Sh. (3 days). Dulwich Chrys. Sh. (2 days).

MONDAY, NOVEMBER 16—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, NOVEMBER 17—
Roy. Hort. Soc. Coms. meet. (Lecture at 3. p.m. on "Carnations in Pots.")

WEDNESDAY, NOVEMBER 18—
Liverpool Chrys. Sh. Newcastle and District Chrys. Soc. Sh. (2 days). Bristol Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 19—
Scottish Hort. Assoc. Chrys. Sh. (3 days).

FRIDAY, NOVEMBER 20—
Bolton Hort. and Chrys. Soc. Sh. (2 days). Aberdeen Chrys. Soc. Sh. (2 days). Edinburgh Bot. Garden Guild An. meet.

MONDAY, NOVEMBER 23—
Nat. Chrys. Soc. Executive Com. meet.

FRIDAY, NOVEMBER 27—
Dundee Chrys. Soc. Sh. (2 days).

MONDAY, NOVEMBER 30—
Nat. Chrys. Soc. Floral Com. meet.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 46.3.

Actual Temperatures :—
London, *Wednesday*, October 28 (6 p.m.): 48°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London, *Thursday*, October 29 (10 a.m.): Bar. 29.4; Temp. 50°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Bulbs, etc., at Stevens's Rooms, 38, King Street, Covent Garden

WEDNESDAY—
Trade Sale Bulbs, Liliums, etc., at Protheroe and Morris' Rooms, at 3.

THURSDAY—
Roses, at Protheroe and Morris' Rooms, at 1.

The Destruction of Flies

With the proof that the common fly is a carrier of human disease, it has become imperative to prevent, so far as possible, the multiplication of this dangerous pest. As has been shown in the case of other disease-carriers, such as the mosquito, the best mode of attack is to destroy the larvae. This may be done by discovering the breeding-places, and so treating them that larvae are killed. Unfortunately, one of the chief breeding-places of the common fly is the manure heap, and it is not easy to devise a method which, whilst destroying the larvae, does not impair the value of the manure. Nevertheless, the search for a practicable method has been brought to a successful issue by the joint labours of Messrs. F. C. Cook, R. H. Hutchinson, and F. M. Scales, of the U.S. Department of Agriculture. An account of the details of this work may be read in *Bulletin* No. 118 of the Department. We need only say here that the experiments were carried out in thoroughgoing fashion, and the results obtained are conclusive. By means of borax (sodium borate) the fly nuisance may be greatly mitigated. The treatment consists in adding 0.62 pound of borax, or 0.75 pound of calcined colemanite (crude calcium borate) to every 8 bushels (10 cubic feet) of manure immediately it has been collected from the stable or byre. After the addition of borax, 2 to 3 gallons of water should be sprinkled over the heap. The borax should be applied particularly round the outer edges of the pile by means of a flour-sifter or other fine sieve. If this be done, all eggs deposited in the heap are prevented from hatching. Since the maggots congregate at the outer edges of the heap, most of the borax should be applied there. The treatment should be repeated with each addition of manure. Needless to say, refuse heaps of all kinds may be treated in a similar manner, and also the floors and crevices in stables, barns and sties.

Once the necessary amount of borax has been weighed out into a measured vessel, no further weighing is required. Experiments made by the authors show that, when treated with the above-mentioned amount of borax, manure loses none of its fertilising properties. Nor does the borax in these amounts produce any harmful effects on the growth of plants dressed with the treated manure. Its effects were tested on many crops—Wheat, Tomatos, Peas, Beets, Radishes, Kohl-rabi, Oats, Corn, Cucumber, Lettuce, Apple seedlings and Roses. In only one case—that of Wheat—was there the slightest sign of damage to the plant, and in that case, the damage—a yellowing of the tips—was but transitory.

To be on the safe side, however, the borax-treated manure should be used at a rate of not more than 15 tons to the acre.

Needless to say, borax is extremely cheap, and if, as seems clear, it is effective, its use should become a general practice, not only in gardens and farms, but also in those unsavoury dejecta of the household— the contents of the dustbin. It is to be hoped that our readers will not only put in practice the method, but will endeavour to make it widely known.

Eradication of Wild Garlic.

Wild Garlic (Allium vineale L.) is at times a troublesome pest of cultivated land in its native habitat, Western Europe, but is yet more troublesome in the land of its adoption, the United States. So serious is the pest in parts of Indiana that farmers are said to have become discouraged in their efforts to check it and are selling their farms. The reason for the seriousness of this pest is that its mischief does not cease with injury to the crop, but continues in the grain. Thus it is very difficult to separate the Garlic bulbils from Wheat, and "garlicky Wheat" fetches but a poor price, for the bulbils, if left with the grain, gum the rollers and impart their strong flavour to the flour. Experiments carried out in various countries have not succeeded in showing a thoroughly practicable method of destroying the plant. Those conducted at Woburn included the application of many different chemicals: lime, gas-lime, carbolic acid, sulphocyanide of ammonia, etc., and also sowing the land with special crops, *e.g.*, Lucerne and Grass mixture, consisting of 14 lbs. Orchard Grass, 7 lbs. Tall Fescue, 7 lbs. Tall Oat Grass, 1 lb. Rough-stalked Meadow Grass, 3 lbs. Chicory, 8 lbs. Burnet, 1 lb. Yarrow, 3 lbs. Kidney Vetch, 1 lb. Alsike Clover and 2 lbs. White Clover. The Garlic was greatly reduced on the Lucerne-sown land and exterminated on that sown with the Grass mixture. Of the chemicals experimented with at Woburn carbolic acid and sulphocyanide of ammonia were partially effective.

A new method tried by Mr. F. J. Pipel and reported on in *Bulletin* 176, Vol. 18 (Purdue Univ. Agric. Exp. Stat.), consists in spraying the Garlic with orchard-heating oil. This must be done in the absence of a growing crop and is supplemented by autumn cultivation so as to cause the bulbs to sprout and grow to proper size before a second spring spraying. The spray should be applied before the Garlic begins to form heads. The oil is strained through two thicknesses of cheese cloth and is spread by means of the sprayer in a fine mist-like spray. Metal tubes and not rubber should be used and rubber washers should be replaced by those made of leather. Spraying should be done in warm, still weather at the rate of 75 gallons per acre. The oil does not prevent the germination of seed, such as Wheat, Oats, Corn, etc. The spray fluid "orchard-heating oil" is a by-product from the fractional distillation of rock oil, and it has been used heretofore for heating orchards to prevent injury from frost. It is sold by the Standard Oil Company and is not injurious to stock. Applied at a pressure of 80-100 lbs. it produces a fine mist-like spray. The *Bulletin* concludes with a description of the spraying outfit suitable for work on a large scale. An alternative method for treatment of Wild Garlic on a small scale consists of applying kerosene as a spray or sprinkling it on the plants with a watering-can. Crude carbolic acid applied before the plant flowers is also to be recommended.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Tulip William Copeland.

OUR DUTY TO OUR NEIGHBOUR.

There is a strong and growing feeling that a fund should be started in order to provide assistance for Belgian and French horticulturists whose gardens have been destroyed and whose means of livelihood have been removed by the German campaign of destruction. Of the numerous letters which we have received bearing on this subject some are published in this

issue, and others are held over for the present. But we may inform our correspondents that as soon as the German invasion of Belgium occurred, and it was seen that much damage was inevitable, we took steps to ascertain what extent of assistance was likely to be required. Upon that task we are still engaged. We have evidence enough to show that help will be urgently needed, but we find also that in the present disturbed state of Belgium and Northern France—due to the presence of German troops—it is not possible yet to complete the enquiries which must necessarily precede any attempts to meet what we conceive to be the most urgent need, namely, the re-establishment of the "small man" engaged in horticulture. In the meantime we would draw attention to the request for employment by a Belgian horticulturist which occurs on page 296, and would ask those of our readers who without detriment to their staffs of British gardeners can find employment for skilled Belgians to communicate with us.

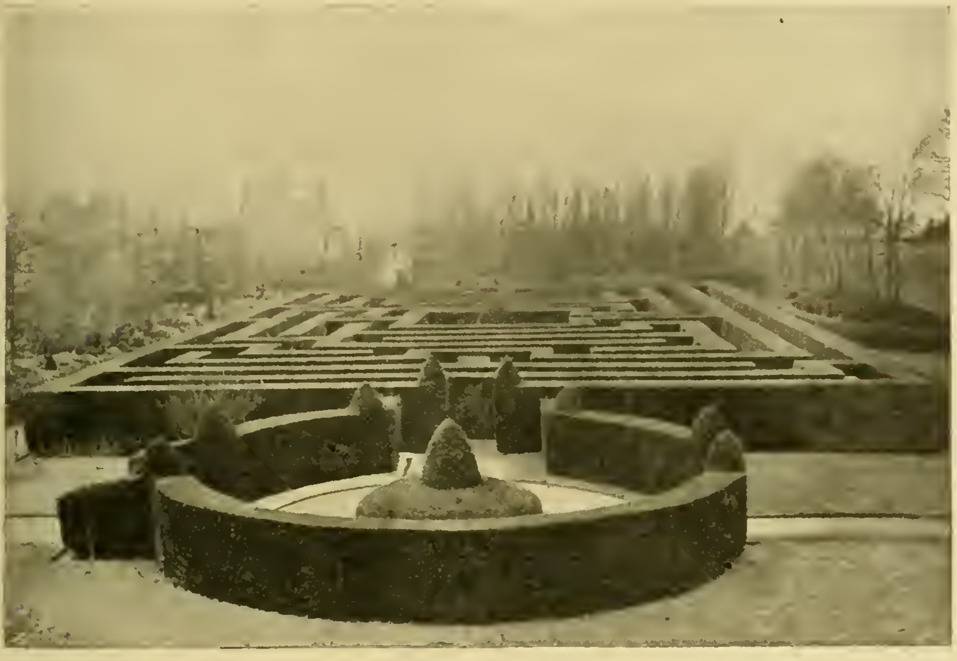


Fig. 117.—THE MAZE AT BLETCHLEY PARK.
(See p. 290).

War Items.—At the Dominion Fruit Conference, held at Grimsby, Ontario, on September 2 to 4, the following resolution (among others) was passed:—"Resolved, that in this great struggle, into which Great Britain has been forced, in order to preserve her national honour, the ideals of freedom and democracy, and even her existence itself, the fruit-growers of Canada contribute liberally of their substance in order to support and strengthen the Empire." The loyalty and affection of the attitude of Canada towards the Mother Country has long been known to us, but it is cheering to find so hearty an expression of the goodwill of Canadian fruit-growers and to witness their willingness to come to the aid of Great Britain in her hour of need.

—— A Chrysanthemum Day was held in Glasgow on the 24th inst. on behalf of the National Relief Fund, and the receipts amounted to £2,480, which sum will be paid to the Fund without reduction.

—— The Secretary of the Dover Horticultural Society informs us that the Chrysanthemum Show will be held on Nov. 10 and 11, but it has been decided to withhold all prizes and to give the whole of the profits of the show to the Belgian Relief Fund. The exhibits will be judged as usual, and certificates given to successful exhibitors. The surplus flowers will be sold by public auction, but should any exhibitor wish, the amount realised for his exhibit will be repaid him.

—— A "Flower and Fruit Day" on behalf of the Belgian Relief Fund was held in Edinburgh on October 24. It was very generously supported by owners of gardens, not only in and around Edinburgh but in other parts of Scotland. Close on £2,500 was realised.

—— A fruit of Apple Robert Blatchford, weighing 25 oz., grown by Messrs. Chivers and Sons, Heacham, Norfolk, and presented to the *Weekly Dispatch* Fund for providing cigarettes and tobacco for soldiers and sailors in the fighting line, was sold in Glasgow by public auction for £30 9s.

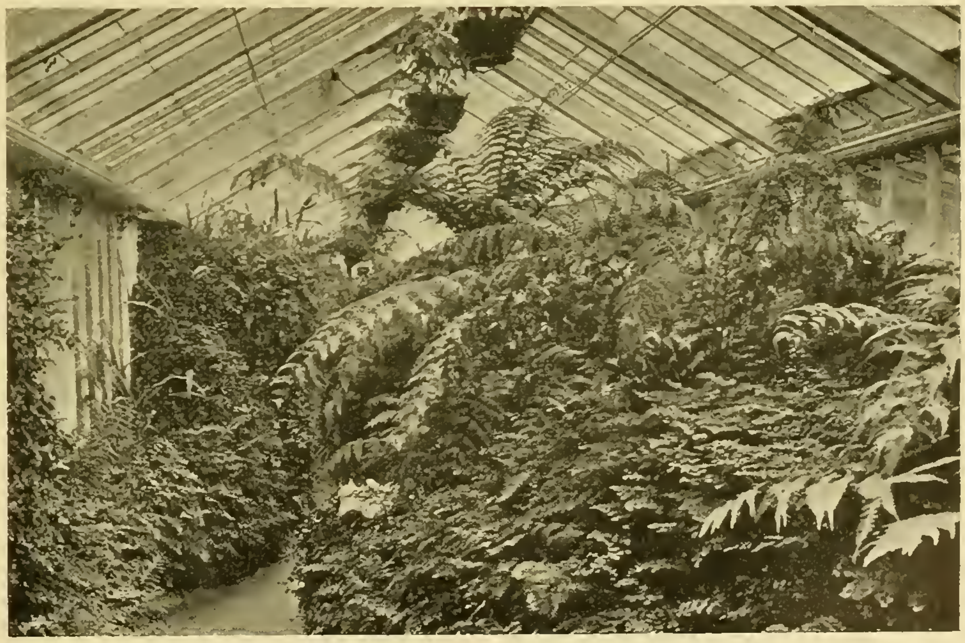


Fig. 118.—THE FERN HOUSE AT BLETCHLEY PARK.
(See p. 291).

A Letter from Monsieur Lemoine.

—— I am deeply grateful to you for the interest which you are taking in our position, in the sad circumstances in which we find ourselves. Here the guns are roaring almost day and night, and have been for the past two months, sometimes near and sometimes at a distance. Thanks to our brave soldiers—whose courage one can never sufficiently praise—none of the Germans has as yet penetrated into Nancy, except for some prisoners, and I hope that none will come. However, their Uhlans have been within five miles of here. Their attacks were repulsed, and they have lost in Lorraine probably a whole army corps. Throughout the whole region which they have occupied they have bombarded and burnt the towns and villages, assassinated inoffensive inhabitants, old men, women and children, and even done worse things than these. Nomeny, Blamont, Baccarat, Badonviller, Gerbéviller, and many other places are in ruins. They have tried especially to get at ambulances, churches, historical monuments, and, above all, the workshops or factories whose products competed with their industries. Nancy, which is an open town, and entirely unfortified, has twice been visited by their aviators (some damage and several victims); and in the night of September 9-10, in the middle of a fearful storm, a bombardment was made (about 60 bombs) which killed eight women and caused more than a million francs-worth of damage. The shells whistled over our garden, but none of them fell there. Our staff has been reduced by the mobilisation, but we have provisionally replaced all those who are gone to the front. To maintain our stocks and our sowings we have not reduced our establishment charges; on the other hand, as we have absolutely no local sale, and neither the post nor the railways are accepting any parcels in the region of hostilities, we shall not sell a sou's-worth during the whole time of the war. We shall continue as long as we can. We had been intending to bring into commerce at the end of this summer our new Begonia Nancy. It will be for the summer of 1915. We had for this autumn several new shrubs—a single-flowered Lilac, white "Mont Blanc" (which we consider to be the best white); a double-flowered Philadelphus "Girandole"; a red-flowered Hydrangea, "Etincelant," etc. These will be placed in commerce later on. We have received no news of our colleagues. Nearly all the French horticultural journals have ceased publication, and postal correspondence takes an interminable time to get to its destination. Thanking you for your great kindness. Please accept the assurance of my best sentiments. *E. Lemoine, The Nurseries, Nancy, France, October 21, 1914.*

A Horticultural Eye-witness.

—— The following account of what actually occurred during the invasion of one particular part of Belgium deserves to be put on record. It is based not on hearsay evidence, but on the personal observation of a Belgian horticulturist of repute, who —a refugee in this country—has supplied and vouches for the truth of the information. The extensive nurseries of Michels Frères, at Montaigne (Diest) are some of the largest in Belgium, and give employment to 250 workers. The place was visited by German troops. A large shed which served for wintering Roses was set on fire by means of benzine. Unable to open the safe in the office, the soldiers burst it open by means of a mitrailleuse. The head of the landscape department of the nursery was seized as a hostage, but was subsequently released, and is still at his post at Montaigne. M. Edmond Michels is in Brussels, which town he is not allowed to leave. The head gardener, who was arrested and examined by soldiers, states that his lodgings at an hotel were visited and occupied by troops. After having stolen various articles, the soldiers occupied themselves with tearing and destroying plates and notes in the books on horticulture which they found in the rooms. Having sacked the house, emptied the wine-cellar and killed a cow, the German soldiers appropriated a carriage belonging to the hotel in which they stowed two cases of wine. They then departed with their plunder. The horticultural establishment of Juchem and Sons at Vieux-Dieu (Antwerp) had to be destroyed by Belgian engineers in order to prepare the defence of the Fort de Vieux-Dieu. Of these nurseries nothing remains—trees, shrubs, Conifers, Roses, are all destroyed, and the house of the proprietor was blown up by dynamite.

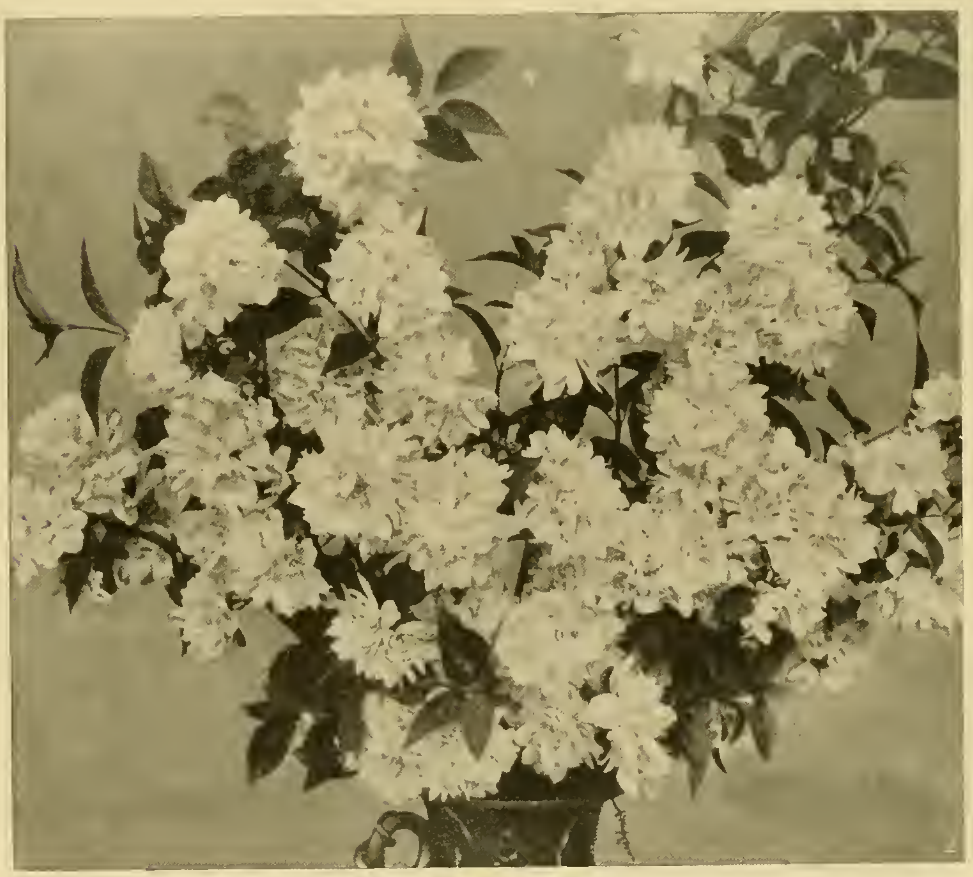


Fig. 119.—PHILADELPHUS GIRANDOLE, A NOVELTY RAISED AT THE NANCY NURSERIES.

Work Wanted by a Belgian Gardener.

—— We trust that some reader can render help in the following circumstances :—A Belgian horticulturist who till a fortnight ago was carrying on the business of nurseryman in the neighbourhood of Antwerp, and who is now a refugee in this country, is in need of employment in a nursery or private garden. He has had a wide experience in the cultivation of fruit and other trees, and also of ordinary nursery stock. The reader who can provide such employment without displacing an English gardener is invited to write to the Editors.

Dutch Middlemen and German Trade.—During the past week a circular from a German seedsman has been issued broadcast in this country. The circular announces the novelties in flower seeds which the firm in question is prepared to supply. The circular is printed in "broken" English, and although we cannot congratulate the author on his knowledge of our language, we must, we suppose, give a grudging testimonial to his enterprise. When, however, we discover that the distributing agent is a well-known firm at Hillegom, Haarlem, we are constrained to ask whether such action comes within the terms of a strict neutrality. It is not our business to offer advice to this Dutch firm; but it is our business to draw the attention of the horticulturists of this country to the fact that it is endeavouring to induce our countrymen to commit an illegal act. We doubt very much whether this course of action will commend itself to the generality of Dutch nurserymen. We know that it will not commend itself to our readers.

Mr. Leonard Sutton, who has been selected for the coming year as Mayor of the borough of Reading, is the youngest son of the late Mr. Martin Hope Sutton and the second senior partner of the firm of Sutton and Sons, Reading. He was born in 1863 and was educated at Wellington College and the Royal Agricultural College, Cirencester. Mr. Sutton is a fellow of the Linnean Society, and has been closely connected with agricultural education since leaving Cirencester. He has been for some years chairman of the Reading Education Committee, and is also Member of the Council of the Reading University College, being chairman of its Advisory Farm Committee. It was on the initiative of Mr. L. Sutton that, with a view to the agricultural development of University College, a deputation of the Council visited some of the chief agricultural colleges of Canada and the United States in 1910. Mr. Sutton is a member of the Berkshire County Association. He has two sons serving as second lieutenants with His Majesty's forces, in the Berkshire Yeomanry and the Royal Sussex Regiment (7th Battalion).

Awards at the Anglo-American Exposition.—Mr. Amos Perry has been awarded a Gold Medal and Diploma by the committee of the Anglo-American Exposition for flowers planted in the grounds.

Sending Living Plants by Post.—Hans Goldschmidt, writing in the *Bulletin* of the Department of Agriculture for Trinidad and Tobago, May, 1914, says :—"The simplest and safest means of forwarding small living plants from tropical countries is by post as 'samples of no value.' I have had good experience with the packing of Orchids of all kinds, including the very delicate terrestrial Orchids of the Anoectochilus group. It is best to pack the Orchids in sawdust, which must be air-dry, all moisture on the packing material being avoided. Coco-nut fibre or the brown fibrous earth found in the leaf axils of many tropical Palms can be used instead of sawdust. The earth must, of course, be broken up and sifted. Sphagnum especially has turned out very well as packing material. The small plants are well surrounded with this dry material, and then wrapped several times in gutta-percha tissue or oiled silk, so that it is practically impossible for them to come into contact with the air. This should be tied up with string or bast, so as to make a firm parcel, and then wrapped in one or two layers of parchment paper. Several plants can often be put into one sample bag. Small Orchids with bulbs can also be despatched in the same manner. Plants with tender, fragile rootstocks and stems should be carefully and firmly tied to sticks before wrapping them up, so as to avoid breaking them when being packed. The more carefully the packing is done, the more likely are the plants to arrive in good condition even after a journey of four to eight weeks. It is also necessary to ascertain beforehand the conditions under which they can be posted and the limit of weight. If circumstances permit it is advisable to pack the small plants at once when taking them out of the ground, or very soon afterwards. This precaution is essential when it is a question of thin-leaved Orchids without bulbs, such as Anoectochilus, Goodyera, Physurus, etc. The weight should also be immediately ascertained by means of a light pair of scales, as excess weight can easily be avoided when packing. Should the packing be only provisionally done and the packet afterwards have to be untied, tender plants are easily damaged."

Pelargoniums 70 Years Ago.—The nurserymen's catalogues are now out, with abundance of flowers at a guinea and guineas apiece. The descriptions abound as usual with splendid, matchless, indispensable, novel, magnificent, and words of similar import without end. Amateurs believed it all once and with reason, for every season's advance was a stride. But now we wait a bit to see them in their true colours, and if we neither find them in letter A at Chiswick, nor in the seedling tent among the two-years-old, we shall put them down as good for nothing—unfit to exhibit—in fact, all that our notebooks remind us too many of them are. Let nurserymen, therefore, do what they ought—respond to the liberality of the society offering such liberal prizes, and serve the public and themselves by exhibiting the objects of their advertising praises at the shows of the ensuing season. There is abundance of time, and nothing but want of merit can excuse their absence. *"A Purchaser," in Gardeners' Chronicle, November 2, 1844.*

Artificial Manure for Tomatos.—The conclusion reached in *Bulletin* 142 of the West Virginia University (Agric. Exp. Station) is that the best artificial manure for outdoor Tomatos is one containing 3 per cent. nitrogen, 8 per cent. available phosphoric acid, and 10 per cent. potash. The manure, which should be applied at the rate of 400 lb. to the acre, may be composed of 75 lb. nitrate of soda, 200 lb. of 16 per cent. acid phosphate and 80 lb. of muriate of potash, or 75 lb. of nitrate of soda, 150 lb. steamed bone meal and 80 lb. of muriate of potash. The crop requires also stable manure or other humus-yielding material.

Experiments with Hops.—Under the title *Notes on Hops*, Mr. E. S. Salmon has published, in the form of a booklet, the results of the breeding experiments with Hops made during the years 1912-14. Among the interesting seedlings which have been obtained is a plant of uncertain parentage which shows marked resistance to eelworm disease (nettle head). The variety, which has been named the Foundling, is a late Hop rich in resins, and is being subjected to comprehensive trials. The work at Wye includes the sending out of male Hops of definite flowering periods, in order that growers may have a stock of suitable pollenisers in their gardens. The importance of growing male Hops is shown when damp and cool weather obtains during the flowering period, for in those circumstances pollen is not carried any considerable distance. Hence the importance of the precaution of planting pollenisers in each Hop garden.

Glasgow and the Proposed Looh Lomond Park.—The proposal that the city of Glasgow should acquire land at Balloch, Loch Lomond, for a public park has advanced a stage by the approval by the General Finance Committee of the Town Council of the draft agreement for its purchase at a price of £30,000. Should the necessary Parliamentary powers be received before August 11 next, the price would be payable on November 11, 1915. Keen interest is being felt in the proposal, as it would ensure public access to Loch Lomond at a part about which there has been considerable litigation.

Scarcity of Pitwood.—In consequence of the war imports of pitwood have ceased, and supplies must now be got from home woods if the collieries are to be kept going. We learn from the *Transactions of Royal Scottish Arboricultural Society* that conferences between colliery owners and timber merchants have been held at the Board of Agriculture, at which the Society and the Landowners' Co-operative Society were represented, and committees are now endeavouring to simplify specifications and fix suitable prices, and to obtain information regarding available supplies of material and labour where the latter is scarce. The Board has also conferred with the railway companies with the view of securing a reduction in railway rates.

Evening Classes in Horticulture.—The West of Scotland Agricultural College has issued a syllabus of horticultural instruction prepared by Mr. A. Hosking, Superintendent of the Horticultural Department. Two courses are provided—a Junior and a Senior course—and each consists of twenty evening lectures. In addition, evening classes are held in general botany and in chemistry. The fee for the first year's course is 15s., and for the second year £1. In the first year the subjects are horticulture, botany and chemistry, and in the second year horticulture and botany. A special evening class college certificate is to be instituted, and the Governors of the College hope that the courses will serve as a preparation for the National Diploma of Horticulture.

Fruit Crops in New Hampshire and Maine.—The Board of Agriculture and Fisheries has received a report, dated October 14, regarding the fruit crops in the States of New Hampshire and Maine. Apples are a very good crop of excellent quality, but owing to the curtailment of exports it is expected that the large crop will keep down prices, which vary from 4s. 2d. to 6s. 4d. a barrel. In New Hampshire other fruit crops are abundant, with the exception of Pears and Peaches.

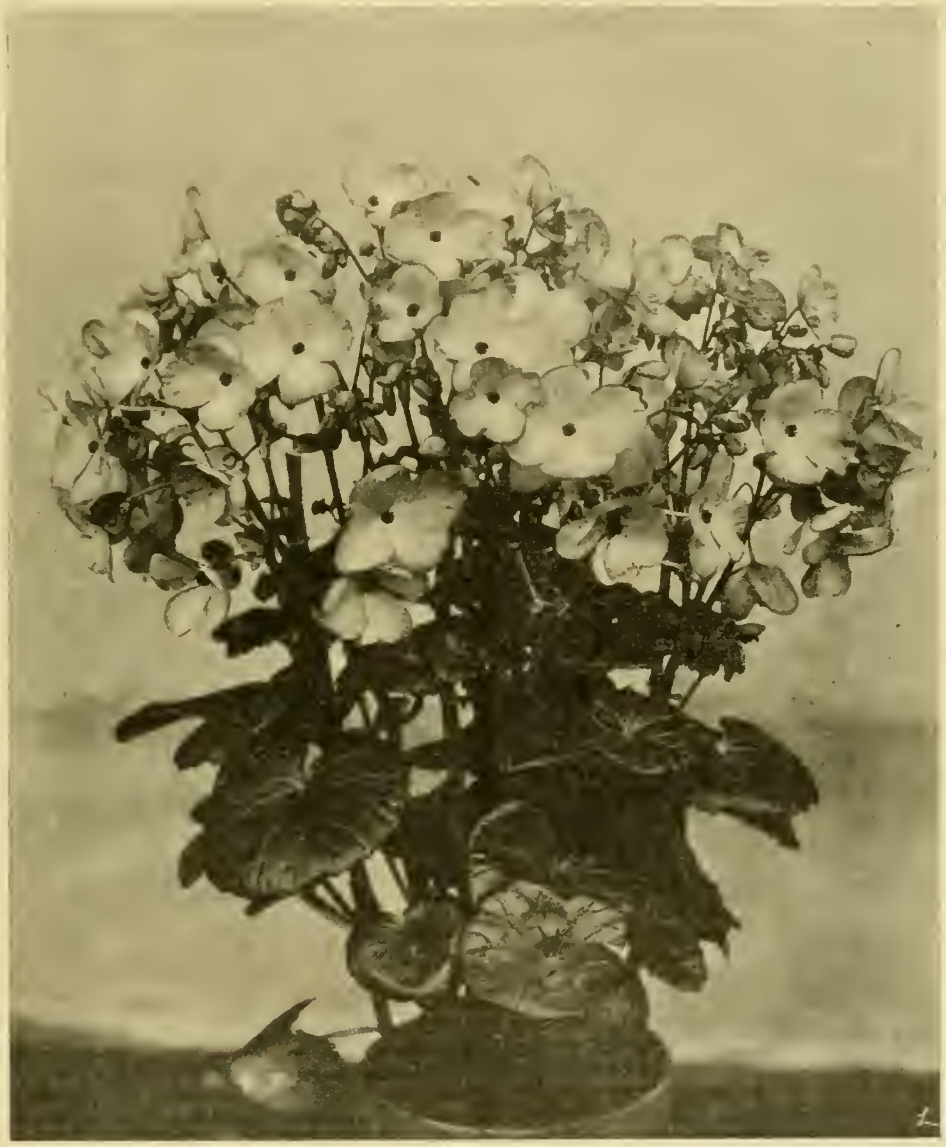


Fig. 120.—Begonia Nancy, a hybrid from B. socotrana and B. Baumannii.

BEGONIA NANCY.

Like Begonia Gloire de Lorraine, raised by my father more than twenty years ago, B. Nancy is a hybrid of B. socotrana, but while B. Dregei was the male parent of the Gloire de Lorraine, Begonia Baumannii, a tuberous sort with large pink sweet-scented flowers, was the pollen parent of the present novelty. Therefore, this, being very unlike the numerous varieties originated from sports of Begonia Lorraine, is easily distinguished by its different habit, although it retains the superior qualities of floriferousness of this most useful plant.

The short stems, of a bronzy pink, are erect, and well furnished with a good foliage, the leaves being round or kidney-shaped, sometimes peltate, of a dark green. The inflorescences are borne by upright and stout flower-stalks, springing from every axil and standing well above the foliage. They are in form of regular dichotomous cymes, carrying a quantity of flowers, nearly all male, with four petals, the lateral ones being longer. These vary in quantity, in size and in colour, according to the age of the plants and the manner in which they are grown. They are generally about 2 inches wide, but flowers of 3 and 3½ inches are frequently to be found, principally on younger plants. The colour is a rich, rosy-carmine with very apparent nerves, and chrome-yellow stamens. The female flowers, with five petals, are produced in small number at the end of the clusters, which are slightly sweet-scented.

Though commencing to bloom in the middle of October, December, January and February are the best flowering times of this beautiful plant.

The novelty was awarded a certificate of merit by the National Horticultural Society of France on January 9, 1913, and a Prize of Honour at the Paris Horticultural Exposition on October 24, 1913. *E. Lemoine, Nancy, October 21, 1914.*

THE MARKET FRUIT GARDEN.

The Colouring of Apples.

It will be interesting to learn what those who maintain that it is rainy weather which mainly colours Apples have to say of the results of the present droughty and sunny season in this connection. Never in my experience have Apples generally been more splendidly coloured than they have been this season. This statement applies not only to dessert Apples, but also to nearly all culinary kinds.

Apple Charles Ross.

This variety is growing in favour in the markets. It is a pity that it is over-large for a dessert Apple; but as the trees grow older this fault will be corrected to some extent. At present leaving the fruit unthinned has no effect in preventing growth to a large size, because it thins itself to one Apple on a spur almost uniformly. My trees were bowed down with the great weight of fruit upon them, and yet nearly all the Apples were large. Certainly the variety is one of the most handsome in existence; but there is one difficulty about it. The fruit sticks on better than that of most varieties, and therefore can be left to attain its full brilliance. Unfortunately, however, this brilliance attracts birds, and, as the fruit is soft and sweet, it is more badly pecked than almost any other kind of Apple when left to ripen fully on the trees, as it needs to be, if it is to make its full value. Hundreds of handsome Apples of this variety, weighing half a pound each or a little less, were rendered unmarketable by small peck-holes in them

Storing Apples.

Recommendations as to the storing of Apples appearing in print from time to time usually strike me as wrong on some points. For example, in the leaflet from the Board of Agriculture, quoted in *Gardeners' Chronicle,* October 3, p. 233, small growers are recommended to pack in large earthenware jars as soon as sweating is over. This strikes me as very bad advice, partly because rotting is likely to spread rapidly among Apples in a compact mass, and partly because such packing does not allow any opportunity for the frequent inspection desirable in order to take out any fruit as soon as it begins to rot. Then, as to storing on a large scale on fixed shelves of slate or seasoned wood, recommended in the same leaflet, the plan lacks the convenience of movable trays. When it is desirable to remove from the fruit room and market any variety which is not keeping well, there is much less work in removing trays with the fruit in them than in collecting it from fixed shelves. This, however, is not by any means all the difference in convenience between the two plans; for when fixed shelves are used, the fruit, after being picked over in order to take out any Apples which show defects likely to lead to rotting, may have to be moved from the packing table on which the selection took place, and taken out of its receptacles to be placed on the shelves, unless the receptacles into which the fruit was placed when gathered are taken into the fruit room for selection, which is less convenient than doing the work on a packing table. We do not want to waste the space in a frost-proof fruit room by having a packing table in it. My own plan is to gather the fruit into Potato sprouting boxes, with latticed bottoms, through which air can circulate, and cross handles. These can be placed one above another in the van to be carted home, and piled up to any convenient height in the barn or other fruit chamber, either for marketing promptly or for picking over for long keeping. In the former case each variety can be dealt with as desired, packing from the boxes into the receptacles for market. In the latter case, the fruit good enough to deserve space in the frost-proof fruit chamber is put from a full box into an empty one, and the latter when full is taken to its permanent quarters. The filled boxes for storing are stacked up as high as they can be safely in tiers, say 15 to 16 boxes high; and in order to allow plenty of air circulation the tiers should be no more than three deep. For example, in my fruit room, made out of the bay of a large barn, the tiers of boxes are three deep on each side of the room, while there can be a middle set of three tiers also. There are then two passages along the length of the chamber, as space for air circulation and inspection The facilities for periodical inspection are obvious, as the fruit in any box can be turned over by the hand, in order to ascertain whether rotting has begun. There is plenty of space between the fruit in a box and the cross handle and ends on which the box above rests. Of course, the tiers of boxes of different varieties should be placed separately, though touching each other, in order that any sort may be removed for marketing when desirable. As a rule, there are two layers of fruit in each box. Too much space would be wasted by placing in single layers. The receptacles are styled "boxes" because that name is used in connection with Potato sprouting, for which the pattern was originally devised. They are really trays with handles, however. Larger trays without cross handles are made specially for Apple storing; but the handles are a great convenience for moving the fruit. Moreover, the large trays without handles are not suitable for picking into when the fruit is gathered. *A Southern Grower.*

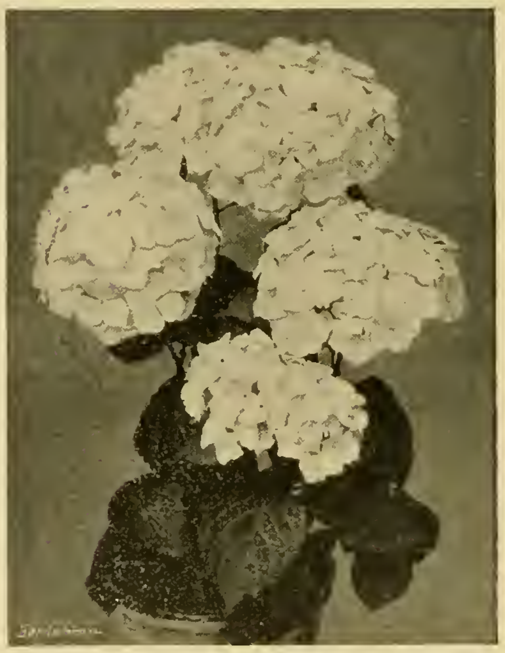


Fig. 121.—Hydrangea Etincelant, a novelty with red flowers.

(See note by Monsieur Lemoine on p. 296.)

VEGETABLES.

THE CELERY CROP.

It is pleasing to record that in these gardens, notwithstanding the summer drought, Celery has never been better, although the Celery fly almost devastated the plants in the early part of the season, both before and immediately after planting in the trenches. The pest was so bad at this stage that not a particle of green foliage was left on many of the plants, but by persistent picking and keeping the plants dusted thoroughly with fresh soot they have since made magnificent growth. Up to the time of writing there has been no second attack, as is generally the case about the end of August or early in September. The disease caused by Septoria Petroselini, which was very prevalent two or three years ago, has fortunately been arrested in these gardens. In addition to being one of the most important vegetables, few crops pay better than Celery, and none that I am acquainted with does so much to prepare the land for subsequent cropping. The blanching of Celery is an important item, and for heads which may be required for consumption up to the end of October there is no method known to me which is equal to banding the stems in coarse brown paper. The cheapest paper may be used for the purpose, and, with care, may be used over and over again. The labour saved by this method is very considerable, the blanching being much better than when the plants are earthed up. Slugs and other troublesome insects may be combated by placing a little fresh soot around the bottom of each plant occasionally. By the use of paper the watering and feeding of the roots may be done until the roots are lifted. But after September the ordinary practice of earthing must be followed, as brown paper is not sufficiently frost-proof to prevent the plants from becoming seriously damaged in very cold weather.

Important details in the cultivation of Celery are not to sow the seed too early, never to allow the plants to suffer from want of moisture from the seedling stage until the stems are blanched, and to grow only the best varieties.

HYBRID VEGETABLE MARROWS.

The collection of hybrid Vegetable Marrows exhibited by Mr. Herbert Chapman, of Rye, at the meeting of the Royal Horticultural Society on October 6 created much interest, and surely never before has such a large number of varieties been put together as the result of one cross, in this case the result of crossing the Custard Marrow with Table Dainty. Mr. Chapman's desire was to produce a Marrow of medium size with an improved flavour, and the Custard is of a very superior flavour, but unfortunately of little commercial value. Mr. Chapman asked me if I would undertake to grow some of his seedlings during the past season, and the results were surprising. We grew something like one hundred plants, and the extreme variation and refined appearance of the various forms were extraordinary, whilst the flavour of most was superior to existing varieties. They continued to bear freely during the whole season, whereas one of the parents—namely, the Custard—though bearing freely in the early stages, soon becomes exhausted. Many of the larger varieties of Marrows, though finding favour with the public, are of indifferent quality, and when these newer varieties become fixed they will be likely to gain general favour. *Edwin Beckett.*

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Land Cure for Unemployment.—Referring to the suggestion by Mr. Weathers (p. 266), it may be a good idea to put the unfortunate unemployed to dig the 11,000,000 acres at present chiefly turned over by the plough, but does he think they could put up with a week of it? I am afraid the price would be too low, in the first place. In this part of Kent it is £1 per acre, therefore to earn £1 a week he would have to dig an acre of ground a foot deep. No; such men get too far back to dig deep. The usual procedure is: dig a bit, miss a bit, black a bit. With a plough one can rest assured the ground is all moved, and to the required depth, if the plough is set in and the necessary strength in front to work it. I had occasion the other day to cross the farm; a team of four was ploughing. Does Mr. Weathers mean to say that the unemployed could turn the ground over like I saw it? I don't think so. The essential thing in ploughed, as in dug land (if good crops are to be attained), is old farmyard manure. There is plenty of ploughed agricultural land near here which has never seen any; there is also some which has been given its share, and where some of the finest crops in the county have been grown of roots and cereals. There are soils which must only be ploughed or dug at a particular time, or else it is impossible to work them. For myself I do not think the extra returns would warrant the farmer risking the outlay of having his ground dug by hand. Possibly Mr. Weathers means that the State would help him in finding this work for the unemployed, but then it has the curious knack of making the back ache. *P. E. Cornish, The Gardens, Downs House, Kent.*

The Winter Moth and Banding of Fruit Trees.—With reference to an interesting article in the *Gardeners' Chronicle* of the 17th inst., p. 266, on "The Banding of Fruit Trees," I should like to state that a very experienced entomologist has repeatedly told me that the winged males of the winter moth (Cheimatobia brumata) frequently carry the females up into the trees while in copulation. This being so perhaps partially accounts for the sometimes inefficacy of grease banding. *J. C. Grimwood, Alresford, near Colchester* (*at present with the 8th Essex Cyclists*).

Naming Apples (see pp. 253, 281).—I am entirely in agreement with Mr. A. H. Pearson; in fact, one great reason for the Northern Fruit Congress was the necessity for bringing the North into line with the South, and correcting the names of Apples and other fruits, for I found many well-known Apples known only by local names. As to the Rev. J. B. Hall Apple, I have all along said it is Annie Elizabeth, as my friends can bear witness. I have seen the original tree, and there is this to say for those who call it a seedling—it is a seedling to all appearances, and an old gardener lays claim to have sown the pip. Also the Apple was awarded in 1910, without opposition, so far as I know, from the many experts present as judges, the Silver Medal for the best new (seedling) Apple in the four Northern Counties. Personally I agree with Mr. Pearson as to our Apples needing rigorous limitation and constant attention as to nomenclature. Should Rev. J. B. Hall Apple be Annie Elizabeth, and I will see to it this next year, it shall (so far as I am concerned) retire, like myself, into obscurity. If any of my former horticultural friends are in this district (four miles off Harrogate) I shall only be too delighted to see them and show them my fruit plantation and new garden of 1¼ acre. *J. Bernard Hall.*

—— Mr. A. H. Pearson's letter is of considerable interest to amateur gardeners, and the difficulty he points out is one that needs to be remedied. About six years ago I purchased a pyramid Apple tree, under the name of Gravenstein, which should have fruited the next year. It, however, grew two years without producing any fruit, and when it did it turned out to be a hard fruit of a different shape to the true Gravenstein, and having neither the juiciness nor the Quince flavour and odour so characteristic of that delicious American Apple. On consulting an expert I was informed that the Apple tree was the one usually supplied in this country when Gravenstein was asked for. Would it not be possible to prevent much disappointment and waste of time and trouble, which are matters of importance to horticulturists, especially when verging on the age of three score years and ten, as is the writer, who cannot bite or digest a hard Apple, and after taking the trouble to find out the names of suitable Apples fail to be able to procure them? I should be glad, even now, to get a genuine Gravenstein tree, but this time I should want to see and taste an Apple off the tree I purchased. It has occurred to me that if an expert in Apples of the Horticultural Society could be found who would examine the Apple trees in large fruit-growing nurseries, and the nurseryman could give a guarantee from such expert that the tree was true to name, it would pay the nurseryman to get such a guarantee from the increased sales he would get. Pears and Plums are, I find, also not always sent out true to name, and this is equally trying, especially in the case of Gage Plums, which fruit so irregularly that it is not worth while waiting until a good fruit year to find out if they are genuine or not. *E. M. Holmes.*

The Scarcity of Farm and Garden Workers: Suggested Help from the Belgian Peasants.—Few of the minor problems created by the war are more general and pressing just now than that of finding something to do for the thousands of Belgians ready, fit, and willing to work, and for whom we are ungrudgingly providing shelter and hospitality. Though in many sparsely-populated districts like that of the North Riding of Yorkshire sympathetic people are hard set to find homes for the fugitives already here, it is feared that there are 100,000 more to come. A very large proportion of our present guests are peasants who have from a very early age worked hard for their living. It is believed that at least half of the adults of both sexes are intelligent, handy, and strong workers on the land. The remaining men include bricklayers, joiners, masons, mechanics, general labourers, and others who could and would earn their sustenance if they had a chance. Having with most praiseworthy philosophy accepted their temporarily trying fate they are casting off much of the gloomy depression which was weighing them down on their arrival in this country, and they now afford good promise of adapting themselves to their new surroundings. They pick up a useful smattering of English with remarkable smartness, and find their way about the streets of our large cities with most creditable intelligence. Of course, though the war has taken away English workers of all ranks by hundreds of thousands, it does not follow that all the vacancies could be filled by our Flemish visitors. Yet, if the most skilful of these Belgian workers could be introduced to farmers who in many parts of the country are seriously short of men to help them in preparing their land for the next crops, that would be a good stroke of business for all concerned. The foreigners would work hard, live simply, and, feeling that they were not dependent on charity, would bear their temporary expatriation much more easily. Labour in rural districts is scarce in North and East Yorkshire, parts of Lancashire and Cheshire, some districts of Shropshire and Staffordshire, many Midland counties, South Cambridge, Bedfordshire, Warwickshire, Dorset, Wiltshire, Hampshire, the Surrey and Sussex borders, Central and West Essex, and certain parts of Wales. Before the Belgian refugees began to arrive so numerously farmers who had parted with their sons and labourers were fearing that when the harvest was over and the land had to be got ready for the next crops they would have to fall back upon old men, women and boys. In the great corn and root-growing district of Driffield in East Yorkshire, for instance, at least a thousand farm hands have either gone to the front or to be trained in this country for soldiering, and thus many a farmer has only himself and his family to look to. State departments have suggested boy scouts and Labour Exchanges. But scouts only answer well as messengers and for little odd jobs, and the Labour Exchange is over-encumbered with official machinery. A relaxation of education arrangements that would allow lads to help their fathers on the farm as soon as they could be of use till the war is over finds favour in many Northern counties; but a strong impression prevails wherever shortage of workers quickens thought on the subject that, if the Board of Agriculture, the Consultative Committee, the Rural Education Conference, or any more local authority, could by any means bring the best available Belgians and the farmer in want of hands together the experiment would go further than anything yet heard of to solve the difficulty. "Where in the country are we to house our Belgian helpers?" ask some farmers. If a refugee was earning and getting good wages that point would easily be settled. A likely man could afford to run into a big town to sleep. A Leeds widow who could not afford to entertain Belgians gladly finds house-room and good fare for seven recruits at from 12s. to 15s. a week per head billeted upon her. For several years past the Development Commissioners and the Board of Agriculture have spent a considerable sum in the hope of reviving flax-growing as a paying industry. An expert on their behalf travelled through the flax-growing countries of the Continent and presented an exhaustive report. And much time has been spent on experiments at Selby, about which little has lately been heard. Possessing life-long practical experience gathered in the extensive flax-producing districts of their native country, hundreds of these Belgian refugees could give no end of points, scientific and practical, to the best experts at our command. If there is not enough scope for these skilled cultivators of flax in England probably there is in Ireland, where they would meet with as hearty a welcome as we give them. How long these unfortunate wanderers have to be amongst us it is too early to speculate, and any question as to the extent to which they might displace existing and possible English workmen would be a little ungracious if this extra staff was only employed where and whilst Englishmen ware not available. *W. L.*

THE LATE HENRY CANNELL, V.M.H.

Government Trading.—About a year ago evidence was placed before the Council of the Horticultural Trades Association of Great Britain and Ireland that the Irish Board of Agriculture was, through its county committees, purchasing, at the lowest wholesale rates they could obtain, all sorts of nursery stock. This was being divided up and passed on to large and small landowners and holders. It was considered an interference with the legitimate trade of Irish and other nurserymen, and a remonstrance was sent to the proper quarter. A reply was received to the effect that the intention of the procedure was to encourage small farmers and landowners to go in for fruit culture. To this, strictly carried out, there could possibly be no great objection. Again, however, in 1914, the old unfair game is being played. Many county committees of agriculture are sending round for estimates for not only fruit trees, but forest trees—Scotch Fir, Austrian Pine, Elm, Larch, Spruce Fir, Ash and Birch in various sizes. Also plants for cover, evergreen and flowering shrubs and Roses. Surely these are not all required to encourage the small farmer and landowner to go in for fruit culture! One correspondent informs me that "Not only cottagers, but noblemen, can get supplies through their county committees, and that the practice is general throughout nearly the whole of Ireland." I think the case wants to be stated in other than a private trade journal. Therefore I take the liberty of sending this note for publication in the columns of the *Gardeners' Chronicle*. Publicity is often the first step towards reform. *W. Cuthbertson, President, Horticultural Trades Association.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

October 20.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Messrs. A. Worsley, W. C. Worsdell, J. Fraser, W. Hales, Dr. A. Voelcker, and F. J. Chittenden (hon. secretary).

Lachnus viminalis.—Mr. Fraser showed specimens of this very large species of aphis, which attacks various Willows and is very destructive to them.

Willow Seedlings.—Mr. Fraser remarked that it had been reported that Willow seed rarely or never germinates, but he produced considerable evidence in the form of seedlings to show the contrary is the case. A constant supply of moisture and the absence of competition with tall herbaceous plants are necessary to the success of the young Willow seedlings, but given these conditions the seed germinates readily when fresh. He had found seedlings of Salix repens (which will germinate within forty-eight hours of sowing), S. alba, S. viminalis, S. Lapponum, S. Caprea, S. cinerea, S. aurita, S. nigricans, S. phylicifolia, S. arbuscula, and S. lanata. He showed beautifully dried specimens of all but the last of these.

Variegation in Dandelion.—Mr. Worsley showed a variegated Dandelion which had appeared in his garden. The variegation took the form of light yellow patches here and there on the foliage, both young and old leaves being affected. He took the plant to ascertain whether the variegation would appear in another year.

Curious Teasel.—Mr. Bowles showed a curious head of Dipsacus fullonum. It had been noticed while the plant was growing that the flowers had begun to open at the base of the inflorescence first instead of in the middle as usual, and foliose bracts had developed at the top of the stem in a tuft very similar to the crown of the Pineapple on a small scale. Mr. Worsdell took the specimen to examine further.

Malformed Walnut.—Mr. Bowles also showed a curious Walnut, the apex of which was drawn out to a point; it was one of six that had been found in a field at Enfield.

TRIALS AT WISLEY.

During the season 1915-16, the following trials will be undertaken in the R.H.S. Gardens, Wisley:—

Flowers.—*Annual Sunflowers.*—Twenty seeds of each variety to be sent by February 20.

The following trials are to be continued:—Winter-flowering Sweet Peas, Irises, and herbaceous Phloxes, and, for nomenclature purposes, Tulips, Pentstemons, and scented Pelargoniums. For the present no further stocks of any of these are required.

Vegetables.—*Early and Mid-Season Potatos.*—Twenty tubers of each variety to be sent by February 20. As indicated on the form circulated to senders, the locality of origin of the seed and the nature of the soil on which it was grown should be stated. *Early Peas.*—Half-pint of each sort to be sent by February 20. *Autumn Cabbages.*—One packet of each variety to be sent by February 20. *Parsnips.*—One packet of each variety to be sent by January 30

Sundries.—*Winter Washes for Fruit Trees.*—Quantity sufficient for a fair trial to be sent by November 20, 1914.

AMERICAN GOOSEBERRY MILDEW.

The following enquiry form concerning American Gooseberry Mildew is being sent out by the Director of the R.H.S. Gardens from Wisley with the object of obtaining the first-hand experience of growers with respect to this pest. He is sending copies to growers, but any who fail to receive a form should communicate with him at the R.H.S. Gardens, Wisley, Ripley, Surrey.

1. Has your plantation suffered from American Gooseberry Mildew?
   If so, please state:—
   - (*a*) What acreage you have under Gooseberries.
   - (*b*) Are the bushes under trees or not?
   - (*c*) The varieties which have been most and those which have been least affected.
   - (*d*) The losses in crops which your plantation has suffered.
2. Have you practised spraying as a preventive?
   If so, please state:—
   - (*a*) What sprays you have used.
   - (*b*) At what times of the year you have sprayed.
   - (*c*) The results produced by spraying.
3. What in your experience are the results of "tipping" the bushes?
   Kindly state precisely at what season of the year you have "tipped" and whether the "tippings" have been gathered and burned.
4. Do you find that Currants are affected?

Name ....

Address ....

....

Date ....

Please return this form when completed to—
The Director, R.H.S. Gardens, Wisley, Ripley, Surrey.

TRIAL OF EARLY-FLOWERING CHRYSANTHEMUMS.

September 25.—A sub-committee of the Floral Committee met at Wisley on September 25 and October 16, and made the following recommendations for awards, which were confirmed by the Floral Committee and approved by the president and council on October 20:—

Numbers.	Chrysanthemums—Name of variety.	Sent by.	Results in previous year.			Award now recommended.
			Date.	Sender.	Award.	
165, 501	Almirante	Jones, Wells	No previous award.			Award of Merit.
39, 138, 529	Champ d'Or	Barr, Jones, Wells				
497	Evelyn	Wells & Co.				
31, 93, 296, 536	Fée Parisienne	Barr, Dobbie, Jones, Wells				
56	F. Wilson	Simpson				
329, 483	J. Bannister	Jones, Wells				
496	Jimmie	Wells				
250, 472	Lorraine	Jones, Wells				
162	Martin Peed	Jones				
75, 300, 485	Mrs. J. Fielding } synonymous	Dobbie, Jones, Wells				
274, 513	Goacher's Terra Cotta }	Jones, Wells				
527	Mabel Roberts	Wells				
88, 252, 517	Mrs W. Sydenham	Dobbie, Jones, Wells				
58, 538	Pluie d'Argent	R. Veitch, Wells				
19, 106, 309, 444	Roi des Blancs	Barr, Dobbie, Jones, Wells				
52, 208	R. Pemberton	Barr, Jones				
102	Stella	Dobbie				
127, 432	Tonkin	Dobbie, Wells				
74, 158	Caledonia	Dobbie, Jones				
65, 537	Abercorn Beauty	Dobbie, Wells	15/9/10	Dobbie	A.M.	Previous award confirmed.
82, 427	Bronze Goacher	R. Veitch, Wells	24/10/11	Wells	"	" "
95, 160, 497, 525	Carrie	Dobbie, Jones, Wells & Co., Wells	23/9/02	Wells	"	" "
71, 181, 514	Crimson Polly	Dobbie, Jones, Wells	10/9/10	Wells	"	" "
24, 66, 132	Diana	Barr, Dobbie, Jones	29/9/10	Dobbie, Wells	"	" "
62, 344	George Bowness	Dobbie, Jones	12/9/05	Wells	"	" "
23, 81, 343, 482	Harrie	Barr, Dobbie, Jones, Wells	12/9/05	Wells	"	" "
35, 105, 313, 434	Leslie	Barr, Dobbie, Jones, Wells	14/9/09	Wells	"	" "
36, 87, 280, 551	Mme. Marie Masse	Barr, Dobbie, Jones, Wells	9/8/98	Haywood	"	" "
28, 85, 512	Market White	Barr, Dobbie, Wells	29/9/10	Dobbie	"	" "
100, 287, 474	Nina Blick	Dobbie, Jones, Wells	15/9/10	Dobbie	"	" "
22, 276, 433	Perle Chantillionaise	Barr, Jones, Wells	29/9/10	Dobbie	"	" "
13, ,84, 292, 455	Polly	Barr, Dobbie, Jones, Wells	29/9/10	Dobbie	"	" "
108, 471	Ethel	Dobbie, Wells	11/9/06	Wells	"	" "
116 560	Wells' Scarlet	Dobbie, Wells	25/10/10	Wells	"	" "
504	A. Barnham	Wells	No previous award.			Highly commended.
163	Brighton	Jones				
20, 259, 422	Crimson Diana	Dobbie, Jones, Wells				
111, 337	Ernest Baltet	Dobbie, Jones				
224	Flambeau } synonymous	Jones				
114	Fleuve Rouge }	Dobbie				
246	Gascoigne	Jones				
469	Mme. Drouard	Wells & Co.				
199	May	Jones				
9, 272, 428	Minnie Carpenter	Barr, Jones, Wells				
120, 241	Miss B. Miller	Dobbie, Jones				
406	Nellie Riding	Wells				

Obituary.

Henry Cannell, V.M.H.—The news of the death of Henry Cannell, the noted florist and founder of the firm of H. Cannell and Sons, will be learned with regret by gardeners everywhere. He died on the 25th inst. at Swanley, the small Kentish village with which his name is associated, in his 82nd year. Deceased was born at Norwich in March, 1833, the eldest son of a large family. His gardening career commenced at the early age of 11½ years in the nursery business of Messrs. Mackey and Stewart, Norwich. Later he became gardener at Portnall Park, Virginia Water, where he remained for a few years, and on leaving that establishment he opened a nursery business at Woolwich on land belonging to his uncle. His new enterprise prospered, but the district was unsuited to plants, and he removed to Swanley, away from the smoke and fog of the Metropolis. How the "Home of Flowers" at Swanley grew into one of the largest nursery businesses in the country is well known, as is also the great part its owner played in the popularising and developing of such florist flowers as the Chrysanthemum, Pelargonium, Fuchsia, Dahlia, Chinese Primula, Violet, Heliotrope, Canna and Begonia. He used to relate how, as a boy in 1833, he was carried on the shoulders of his father to see the exhibits of the Norwich Chrysanthemum Show, and he retained his interest in the Chrysanthemum through the whole of his long career. His name will ever be associated with the development and improvement of this flower, and he was concerned with the conversion of the old Stoke Newington Chrysanthemum Society into the National Chrysanthemum Society. He put into commerce, at a time when the Chrysanthemum was at the height of its popularity, such notable varieties as Avalanche, Edwin Molyneux, Pride of Swanley, Sunflower (or Swanley Yellow, as some people call it), Putney George, C. J. Whittington, Colonel Curzon, Sydney B. Levick, Mrs. F. Hepper, Lady E. Saunders, Duke of York, Edmund Bevan, John Machar, Kentish White, Mrs. Norris, W. Sparks, Pompon Black Douglas and the following single-flowered varieties, Crushed Strawberry, Jane, Miss Gordon, Scarlet Gem and Mary Anderson. During more recent years Mr. Cannell directed his labours more especially to the improvement of zonal-leaved Pelargoniums and Cannas, and his exhibits of these flowers were always features of the R.H.S fortnightly meetings. He was greatly interested in Cactaceous plants, and it was his pride to refer to his collection as one of the most complete in the country. We have a copy of his special Cactus catalogue, published many years ago, in which are listed most of the varieties in cultivation. This collection is now in the possession of Mr. Reginald Cory, Duffryn, Cardiff. On more than one occasion we have heard Mr. Cannell emphasise the importance of good cultivation, and that he would practise what he preached is evident from the following quotation taken from a report of the R.H.S. Exhibition in *Gardeners' Chronicle*, July 5, 1862, p. 622:—"Of Fuchsias an admirably grown collection was shown by Mr. Cannell, of Clapham. It consisted of medium-sized, conical plants, every one of which nearly covered its pot with gracefully drooping branches laden with flowers. Than this group nothing in its way could possibly be more perfect, and it received, as it well deserved, universal admiration. Very much larger plants were contributed by Messrs. Webb, Gardiner, Harper and Higgs; but as regards fine growth they were considerably inferior to those just mentioned." Mr. Cannell was a cultivator of unusual ability, and, in addition, he possessed a keen business aptitude. It is often remarked how he originated the practice of sending rooted cuttings by sample post, before the day of the parcel post, and this is only one example of his forethought and initiative.

Mr. Cannell's remarks in public were always marked by a shrewd insight into affairs in general and on matters of detail he was most insistent. He spoke with the conviction that betokens the man of experience. He always contributed valuable remarks on the subject of any of the flowers which he grew so well, and he was a keen controversialist, as these pages bear witness. When his observations on Grape-growing were reprinted in these pages, the protagonists included such well-known men as William Miller, Tillery of Welbeck, James Douglas, D. T. Fish, Ingram of Belvoir and Fleming of Cliveden. The Victoria Medal of Horticulture was conferred on him in 1902. The troubles of his closing years were somewhat alleviated by horticultural friends, who contributed a fund for a pension. Amongst his most treasured possessions was a gold medal from the inhabitants of Eynsford, who also planted an Elm tree in the principal part of the village in his memory. Misfortunes followed his declining years, at a time when, owing to failing sight and health, he was unable to cope with them. Had he been able to fight his trouble with youth and vigour on his side, we are convinced that his grit and determination would have surmounted every obstacle, for Henry Cannell was a remarkable man.

MARKETS.

COVENT GARDEN, October 28.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias), per doz. ..	2 6- 3 0
Bouvardia, pink, per doz. bun...	4 0- 6 0
— white	4 0- 5 0
Carnations, per dozen blooms, best American varieties ..	1 0- 1 6
— smaller, per doz. bunches ..	9 0-10 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz. ..	2 0- 2 6
— yellow per doz.	2 0- 2 3
— pink ,,	1 9- 2 0
— bronze ,,	1 6- 1 9
— white, medium per doz. ..	1 3- 1 6
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun...	3 0- 4 0
— — yellow, per doz. bun. ..	2 6- 4 0
— — pink, per doz. bun. ..	3 6- 5 0
— — bronze, per doz. bun. ..	3 6- 5 0
— singles, disbudded, per doz. blooms ..	1 3- 2 0
— — sprays, per doz. bunches ..	12 0-18 0
Eucharis, per doz.	1 0- 2 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 2 0
Lapageria alba, per doz. blooms ..	2 0- 2 6
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long..	1 6- 2 0
— — short ..	1 9- 2 0
Lilium lancifolium album, long ..	1 0- 1 6
— — — short ..	1 3- 2 0
— — rubrum, per doz., long ..	1 0- 1 3
— — — short ..	1 0 —

	s. d. s. d
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	1 0- 1 3
Michaelmas Daisies, per doz. bunches ..	2 0- 3 0
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium,	1 6- 2 0
— Harrisonii, per doz. blooms ..	4 0- 5 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— white, per doz. bunches ..	5 0- 6 0
Physalis, per doz. bun.	5 0- 6 0
Roses: per dozen blooms, Bride	1 0- 1 6
— Frau Karl Druschki ..	1 0- 1 6
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	0 9- 1 0
— Liberty ..	1 0- 1 6
— Madame A. Chatenay ..	1 0- 2 0
— Melody ..	1 0- 1 3
— My Maryland..	0 9- 1 3
— Niphetos ..	1 0- 1 3
— Prince de Bulgarie	1 0- 1 6
— Richmond ..	1 0- 1 6
— Sunburst ..	1 0- 1 6
— Sunrise ..	0 9- 1 0
— White Crawford	1 6- 2 0
Statice, mauve, per doz. bunches .	3 0- 4 0
— white, per doz. bunches ..	2 0 —
Stephanotis, per 72 pips	1 9- 2 0
Tuberoses, on stems, per doz. ..	0 5- 0 6
short, per doz.	0 3- 0 4
Violets, English, per doz. bunches ..	1 0- 1 6
— Princess of Wales, doz. bun.	2 0- 3 6
White Heather, per doz. bunches..	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices

	s. d. s. d.
Adiantum Fern (Maidenhair), best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Autumn foliage, various, per doz. bunches ..	6 0-10 0
Carnation foliage, doz. bunches	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Honesty, per doz. bun.	10 0-12 0
Lichen Moss, per dozen boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches ..	8 0- 9 0

Remarks.—As is generally the case at the end of October, the supplies of Chrysanthemums are in excess of the demand, and large quantities of blooms are sold very cheaply. The best varieties are (white) Mrs. Collier, Mrs. Roots, Moneymaker, H. W. Thorpe, and Souvenir de Petit Ami; (yellow) Cranfordia, David Ingamells, and Lizzie Adcock; (bronze) October Bronze, Source d'Or, and Freda Bedford; (crimson) Mr. Holmes, Cardinal, and Market Red (a good variety); (pink) Cranford Pink, and an unnamed variety brought in by Messrs. Lowe and Shawyer. Single varieties are more plentiful, especially with pink and yellow flowers. There is an abundant supply of Carnations, and their prices are lower. Amongst the best varieties are British Queen, Empire Day, Enchantress, Rose Pink Enchantress, White Perfection, May Day, Lady Northcliffe, Pink Delight, Carola, Mikado, Scarlet Glow, Britannia, and Beacon. Richardias (Arum Lilies) are more plentiful. Pink and red Roses are realising the highest prices for these flowers. There is a good supply of Orchids, consisting chiefly of Cattleya, Cypripedium, and Phalaenopsis, also a few sprays of yellow Oncidium. The market is still well stocked with Gardenias, Tuberoses, Lilies-of-the-Valley, Eucharis, and pink and white Bouvardias.

Fruit Average Wholesale Prices.

	s. d. s. d.
Apples—	
— Californian, Newtown Pippins, per box..	6 0- 7 6
— English dessert, per ½ bushel ..	2 6- 4 6
— cooking, 1 bush.	2 0 4 0

Bananas, bunch:	s. d. s. d.
— Medium ..	4 0- 4 6
— X-medium ..	5 0- 6 0
— Extra ..	6 6- 7 6
— Double X ..	8 0- 8 6
— Giant ..	9 0-10 0
— Red, per ton ..	£20 —
— Jamaica, p. ton	£15 —

	s.d. s.d.
Cobnuts, per lb. ..	0 4 —
Cranberries, per case	8 6-11 0
Grapes: Alicante, per lb.	0 6- 0 9
— Black Hamburgh, per lb.	0 6- 1 0
— English, Gros Colmar, per lb.	0 8- 1 0
— Gros Maroc, per lb. ..	0 9- 1 0
— Muscat of Alexandria ..	1 0- 2 6
— Canon Hall, per lb	1 0- 4 0
Melons	0 9- 3 0
Nuts, Brazils, per cwt.	60 0 —
— Chestnuts, Redon, per bag ..	14 0-18 0

Nuts (*continued*)—	s. d. s. d.
— Walnuts (English), per doz. lb. Doubles ..	6 0- 8 0
— — Singles ..	2 6- 3 6
— — French, per bag	7 0- 8
— — — per sack	17 0-20
Pears, American, per barrel ..	15 0-18 0
— Californian, per case ..	9 0-12 0
— English, ½ sieve	2 6- 5 0
— stewing, per bushel.. ..	3 0- 5 0
Prunes, per ½ bus.	3 6- 4 6
Quinces, per ½ sieve	3 0- 3 6
Sloes, per doz. lbs.	1 6 —

Remarks.—The supplies of English Apples have not been over plentiful this week, but there have been large consignments from Nova Scotia, each shipload consisting of about 30,000 barrels. Boxes of Newtown Pippin and Jonathan Apples are arriving from California. The crop of Doyenné du Comice Pears is a record one, both in Jersey and at home. Keiffer Pears are arriving in barrels from overseas, also Winter Nelis and Doyenné du Comice in cases. Very large supplies of Grapes of all varieties are arriving daily; bunches are more plentiful now than they have been before this season. A few Peaches and Figs have been on sale during the past week. Melons are still fairly plentiful, but the season is nearly over for Prunes, Damsons, Blackberries and Sloes. English and French Walnuts are plentiful, as also are Cobnuts and Chestnuts. The supply of English Tomatos is lessening, but Teneriffe Tomatos are an increasing quantity.—*E. H. R., Covent Garden, October 28, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Beans, French, per lb.	0 6- 0 8
Beetroot, per bushel . ..	3 0- 4 6
Brussels Sprouts, per ½ bus. ..	2 0- 2 6
Cabbages, per tally	5 0- 7 6
Carrots, per bag ..	3 6- 4 6
Cauliflowers, per tally	5 0- 7 6
Celery, per doz. bun.	9 0-12 0
Cucumbers, per flat	4 0- 5 0
Eschallots, per cwt.	7 0 —
Garlic, per lb. ..	0 7- 0 8
Horseradish, English, per bundle	2 6- 5 0
Leeks, per dozen ..	1 6- —
Lettuce, round, per bus. . ..	1 6- 2 0
Mint, per doz. ..	2 0- 4 0

	s.d. s.d.
Mushrooms, cultivated, per lb...	1 3 —
— Buttons ..	1 3 —
— Field	0 2- 0 3
Mustard and Cress, per dozen punnets . ..	0 10- 1 0
Onions, per bus. ..	3 0- 3 6
Parsley, per dozen bunches ..	1 0- 2 0
Sage, per dozen ..	2 0- 4 0
Spinach, per bus...	2 0- 2 6
Tomatos, English, per doz. lbs. ..	3 6- 4 0
— seconds ..	2 0- 3 0
Thyme, per dozen bunches ..	2 0- 6 0
Turnip, English, per bag	3 6- 4 6
Watercress, per doz.	0 4- 0 6

Remarks.—The supplies of all vegetables have increased during the week, and trade is equal to the average.—*E. H. R., Covent Garden, October 28, 1914.*

New Potatos.

	s. d. s. d.
Bedford	3 0- 3 6
Blackland .. .	2 9- 3 0
Dunbars, per cwt.	4 6 —

	s. d. s.d.
Lincoln	3 0- 4 0
Kent	3 3- 4 0
Essex	3 0- 3 3

Remarks—The supplies are sufficient for the demand, and prices remain about the same as last week, but trade is not very brisk.—*Edward J. Newborn, Covent Garden and St. Pancras, October 28, 1914.*

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending October 28.

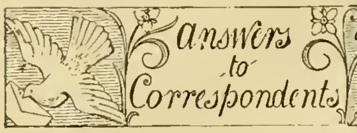
The wettest week for more than twelve months.—This was a very warm week for the time of year, and more particularly in the middle of the week at night. In fact, on one night the exposed thermometer did not fall lower than 53°—a high minimum reading for the end of October. There occurred one cold night, however, when the same thermometer registered 8° of frost. The ground is at the present time 3° warmer at 2 feet deep, and 1° warmer at 1 foot deep, than is seasonable. Rain fell on each of the first six days of the week, and to the total depth of nearly 1¼ inches—making this the wettest week recorded here since the first week in October last year, or for more than twelve months. Of that amount nearly 1¼ inch, equivalent to 5¼ gallons on each square yard of surface in my garden, has passed through the bare soil percolation gauge, but the gauge on which short grass is growing still remains perfectly dry. Both gauges are a yard square, and 2½ feet deep. The sun shone on an average for 3¼ hours a day, which is half an hour a day in excess of the usual duration for the same period in October. On two consecutive days, however, no sunshine at all was recorded. Calms and light airs as a rule prevailed, and even on the one windy day the mean velocity in the windiest hour only reached 14 miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by 1 per cent. *E. M., Berkhamsted, October 28, 1914.*

TRADE NOTE.

Mr. William Lewis, who for some years represented Messrs. John Waterer and Sons, Ltd., chiefly in Wales, has resigned this position and is about to commence business on his own account at Pwllheli in North Wales.

ENQUIRY.

Boyd's Soil Fumigant and Worm Killer.—I shall be obliged if any reader can supply me with the name and address of the maker of Boyd's Sunray soil fumigant and Boyd's worm exterminator. *An Old Reader.*



Answers to Correspondents

Apple London Pearmain : *Suburbs.* Apple London Pearmain is described by Hogg in the *Fruit Manual*, where it is stated to be "an excellent dessert Apple, in shape not unlike Herefordshire Pearmain."

Banding of Fruit Trees : *Mrs. E. J. T.* and *W. M. S.* The American material is called "Bandite" or "Tanglefoot" (see p. 266), and can be obtained from Messrs. Strawson, of London, who are the sole importers. Mr. Barker strongly recommends two bands, one low down, say 18 inches or 24 inches, and another 5 feet or 6 feet, from ground.

Begonias Unhealthy : *Nelson.* There is no specific disease in your plants; the unhealthy condition of the foliage is due to wrong cultural treatment. The plants have been grown in too moist conditions and the ventilation has been insufficient. Arrange the pots well apart so that the air may circulate freely amongst the foliage; be sparing with the water-can and use less water for damping the stages. Ventilate the house freely when the weather is favourable.

Insects Damaging a Lawn : *R. A. B.* The holes in the lawn have been caused by the immature forms of Tipula oleracea, the Daddy Longlegs or Crane Fly. The female lays her eggs in the ground, chiefly during the autumn, and the grubs, or "leather jackets," hatching from these feed upon the roots of grasses and other plants. When full grown they change into chrysalides, which push their way up until they are about half out of the ground; after a time the case splits and the fly emerges, leaving the "shell" projecting from the ground.

Lorette System of Pruning : Terms used by M. Lorette in his Book "La Taille Lorette" : *Correspondent. Coursonne:* A branch system from the "charpente" destined for fruit production. Originally a rameau (branch) by pruning, etc., becomes a coursonne when provided with fruiting organs. Vide fig. 41, as one form of coursonne. Vide also p. 145. *Bourgeon:* Chiefly used by Lorette as a wood shoot, but it means any fairly stout shoot, as opposed to a brindille or a dard. *Dard:* A small shoot ending in terminal flower bud. May be thin and long. Illustrated with a knife stuck through it, or short and stout, vide fig. 66. Say a fruit bud with a long stalk. *Empattement:* Properly spelt empâtement, vide Dr. Durham's article in *Gardeners' Chronicle*, p. 259; also p. 33 of Lorette's work. *Brindille:* Thin wood twig; by some authors both brindilles à fruits (long dard) and brindilles à bois. *Bouton and Bouton à Fruit:* Fruit or blossom buds. *Ride:* Wrinkles, crevices. Could you give us the place where used by Lorette? (Marrowfat or wrinkled Peas, pois rides, as opposed to round, smooth Peas.) *Charpente:* The main stem and branch system as distinguished from the fruiting branches which are supported by the charpente. An ordinary English bush or standard tree is a mixture, one cannot distinguish much between what is charpente and what not. *Lambourde:* Vide p. 144, fairly well described. *Yeux stipulaires:* Vide figure on p. 134. *Oeilleron?* If not oeilleton, probably large oeil, i.e., bouton. Can you give reference to page where used? —*T. A. C.* M. Lorette's book has not yet been translated into English, but there is some talk of this being done.

Names of Plants : *Abbey.* 1 and 2, Crataegus oxyacanthoides vars.; 3, Crataegus oxyacanthoides var. fructo luteo; 4, C. oxyacanthoides var.; 5, C. orientalis; 6, C. punctata; 7, 8 and 9, C. oxyacanthoides vars.; 10, Cotoneaster frigida; 11, Crataegus Azarolus; 12, C. sp.—*P. B. B.* Araujia sericifera (Physianthus albens).—*F. C. Love.* "Black Walnut," Juglans nigra.—*C. T.* Prunus insititia, The Bullace.—*F. W. P.* 1, Clematis paniculata; 2, Olearia Haastii; 3, Symphoricarpus orbiculatus var. variegatus; 4, Thuya orientalis; 5, Cupressus nootkatensis; 6, Cupressus Lawsoniana; 7, Thuya plicata; 8, Cupressus Lawsoniana var. lutea.—*W. E.* It is impossible to determine, in the absence of flowers, whether the leaf sent is Fraxinus Ornus var. floribunda or simply the species F. Ornus.—*H. P., Wycombe.* Chlorophytum elatum variegatum.—*H. W.* 1, Probably Rhododendron Wilsonii; 2, Fraxinus excelsior var. heterophylla; 3, Anthemis tinctoria; 4, Artemesia arborescens; 5, Zebrina pendula; 6, Helxine Soleirolii.—*Insignis.* 1, Mesembryanthemum amoenum; 2, Fuchsia fulgens; 3, Sedum glaucum; 4, S. album; 5, Abelia grandiflora; 6, Sedum Ewersii; 7, S. spurium; 8, Escallonia rubra.

Peach from Stone : *J. S. W.* Your letter was dated October 22, but it did not reach this office until October 26, consequently the Peaches were quite black and decayed and of no use for examination.

Pest Injuring Pear Trees : "*Dun.*" The small caterpillar damaging the leaves is the larva of one of the Tortrix moths. Several varieties attack fruit trees and devour the blossom and foliage, frequently rolling up or spinning the latter together. The moths themselves generally appear from June to August, and the winter is usually passed in the egg stage. Spraying with arsenate of lead in order to kill the larvae has proved successful, but this must be done before the leaves are rolled or spun together. The most favourable time for this operation is about the middle of April, as then the caterpillars are small and in the open. A second spraying, late in May, to kill later-hatched larvae is usually necessary.

Soil for Tomatos : *Amateur.* Although Tomato plants will grow and fruit satisfactorily in good garden or field soil of average fertility, the best results are obtained from good loam of moderate texture. It is not advisable to employ soil in which Tomato plants were grown the previous year, even though it has been exposed to the weather during the winter. You say you set your plants one foot apart in the row, and we assume that you allowed a space from 22 to 24 inches between the rows. Remove all side growths from the plants as they appear, and allow a free circulation of fresh air amongst the plants when in flower. When the clusters of fruit have set apply a top-dressing of half-rotted stable manure and discontinue the use of the fertilisers you mention.

Soil in Vinery : *G. A. U.* In renovating the inside border of your vinery we do not recommend you to employ the soil from a Tomato house, for there is always a danger of such soil being more or less sour from the constant watering of the plants. You are right in attributing the shanking of the berries to an unsuitable rooting medium, and it would be as well to do the work of renovating the border in a thorough manner. It usually happens that when borders are inside as well as outside the vinery most of the roots are found outside the house, and unless measures are taken they will often grow to a great distance. They are sometimes found in the vegetable quarters or in flower borders 40 feet or more from the vinery, and when the ground in which the other crops are grown is dug over many of the feeding roots of the vines are destroyed. A little later in the autumn take out a trench about 6 or 8 feet from the wall of the vinery, and sever all the roots growing beyond this distance. If the soil of the border is sweet a portion of it may be mixed with bone-meal or steamed bone flour, burnt vegetable refuse and old mortar, and the trench filled with this compost. If no roots are found near the surface more of the soil may be removed until there are only a few inches of it above the roots. With the surface soil which remains on the border should be incorporated a mixture of the three materials mentioned, or in place of the old mortar slaked lime may be used. After the vines are in full leaf a nitrogenous manure, such as a little half-decayed stable manure, may be applied in small doses, but not sufficient to cover the soil completely, and twice at intervals of a month before the Grapes commence colouring nitrate of soda, sulphate of ammonia, or powdered saltpetre may be applied at a rate not exceeding one pound to the perch at one time. After the first season you may use a complete fertiliser as well as a little partially-decayed stable manure, and the roots will gradually be attracted to the surface, when they should be covered with additional soil. If there are any roots in the house the inside border may also be dressed now with bone dust, vegetable ash and lime, and be further enriched with nitrogenous matter during the growing season. It will also be advisable to cut a trench through the middle of the inside border next autumn, so that you may know exactly where the roots are.

Walnuts : *S. Drewett.* The nuts are not diseased. The injury has been caused by birds pecking them when soft and young.

Weed on a Lawn : *P. Jenner* and *W. Groom.* The specimens you send are probably Prunella vulgaris, Self Heal. This is a common weed in turf, and is best eradicated by applying a little sulphate of ammonia at intervals during spring and summer. The fertiliser will cause the grass to grow so luxuriantly as in time to crowd out the weeds. Sulphate of iron mixed with the ammonium salt (1 of former to 3 or 4 of latter) is said to give even better results.

Willow Leaves : *H. F. Ormerod.* The leaves of the plant have been galled by a small sawfly—Nematus gallicola. The insect lays its eggs in the leaf-buds of various Willows, and as the leaves unfold the galls develop; the "caterpillar" hatches and feeds within the gall, almost completely hollowing it.

Wireworms : *F. H.* One means of lessening the number of wireworms in a border is to turn over the soil frequently so that such insect-eating birds as starlings, rooks, and peewits are able more easily to get at them. Applications of unslaked lime, superphosphate, and salt are good as deterrents, but in bad attacks the most effective remedy is gas-lime, which, however, is highly dangerous to vegetation, and when used as an insecticide upon cultivated land such land should be allowed to lie fallow for five months. Another means of destroying wireworms is by the use of Strawson's Vaporite, by which fumes are made to spread through the soil.

Yew Trees and Cattle : *Mrs. W.* The sexes of the Yew are usually distinct, but instances occur of male and female flowers being borne by the same plant. Two of the specimens you send with fruit are from female trees, but it is not possible to determine the sex of the third specimen without pollen or fruits. The leaves of the Yew are poisonous, and some people also consider that the flowers and fruits are poisonous, but the fleshy cups are certainly not poisonous, for they are eaten with impunity by birds and small boys. The best way to destroy the roots of Yew trees after they have been cut down is to grub them up, or deep holes may be bored in the stumps, filled with a strong solution of saltpetre, and, when thoroughly dry, set on fire.

Communications Received.—Nawton—G. S.—F. P. Dickson—E. F.—A. M. S.—E. V. A.—G. A. C.—A. H. T.—Lily—P. G. W.—C. M.—W. R. B.—E. V. J.—W. G.—A. B.—A. E.—R. A. B.—W. E.—H. F.—P. and Co.—H. W.—T. J. H.—J. G.—H. R.—P. E. C.—J. C.—F. F.—Mrs. E. J. T.—W. F.—S. M.—H. C. M.—C. J. G.—H. D.—J. W. I.—J. C.—A. Chatenay, Paris.—T. L.—M. D.—S. H. C.—P. H. R.—W. C. S.—Conway.

THE
Gardeners' Chronicle
No. 1,454.—SATURDAY, NOVEMBER 7, 1914.

CONTENTS.

American Gooseberry mildew, the control of 303
Books, notices of—
  Agricultural Journal of the Union of South Africa .. 310
  The Daffodil Year Book 306
Cannell, the late Mr. Henry 310
Chamberlain, the late Mr. Joseph, and Kew Gardens 309
Conifers, notes on—
  Cupressus torulosa .. 305
Diorama pendula .. 310
Employment on country estates 311
Florists' flowers—
  Pelargoniums forty years ago 304
  Early Chrysanthemums 304
Horticultural Club arrangements 309
Impatiens Holstii .. 310
Japan, Mr. Wilson's botanical explorations in 308
Oaklands, Wimbledon Park 304
Obituary—
  Miller, William .. 315
Orchid notes and gleanings—
  Oncidium Leopoldianum 304
Peas, late 310
Societies—
  Croydon Chrys. .. 313
  Hornsey Chrys. .. 313
  Maidenhead Chrys. .. 314
  Manchester & North of England Orchid 314
  National Chrys .. 313
  People's Palace and East London Hort. 314
  Royal Horticultural .. 311
  United Hort. Benefit & Prov. 314
Sweet Peas at Glasgow 306
Tulip William Copeland 309
Unemployment, land cure for 311
Veitchian nursery stock, sale of 310
Vilmorin, M. Philippe de 310
War items 309
Week's work, the—
  Flower garden, the .. 307
  Fruits under glass .. 307
  Hardy fruit garden, the 306
  Kitchen garden, the .. 307
  Orchid houses, the .. 306
  Plants under glass .. 307
Wisley, summer drought at 310

ILLUSTRATIONS.

Cupressus torulosa 305
Polystichum angulare var. 311
Sophro-Laelia Felicia Fowler's var. 312
Tulip William Copeland. (Coloured Plate.)
Xanthoceras sorbifolia 316

THE CONTROL OF AMERICAN GOOSEBERRY MILDEW.

PROBABLY no one who knows the facts considers that there is any possibility of this disease being stamped out in this country, and in view of its disastrous effects on Gooseberry cultivation the question of its control is an urgent one. It must not be overlooked that where it has got out of hand in Gooseberry plantations, the Currants (red, black and white), are also attacked, and there is reason to believe that they are more readily affected now than in the early days of the mildew in this country.

The control of a fungous disease may consist in the application of one or more of the following methods:—

(1) Destruction of the infected plant.
(2) Spraying.
(3) Treatment of soil.
(4) Removal of diseased parts of plant.

(1) There is no doubt that the destruction of infected plants, if possible, is the easiest and most effective method of controlling a disease, if the percentage of infected plants is not high. But where a large proportion of the plants in the country is attacked, as is the case with American Gooseberry mildew, and where infection may be still present in a form not visible to the unaided eye, this is not practically possible. In the early days, when our knowledge of the disease was vague and unreliable, and when it was thought that only the bushes in a small area were infected, the destruction of diseased bushes was ordered by the Board of Agriculture and Fisheries. Examination of other parts of the country soon showed, as it does in nearly all cases of a supposed rare disease, that infection was widespread, and that the policy of destruction would lead to the extermination of all the bushes in the country. In practice it is also found difficult to draw the line between two adjoining bushes or patches of bushes, for while one person with experience in detecting disease will find an infected shoot and condemn the tree, another observer will miss slightly infected shoots, and so render the destruction of other bushes useless, and both will miss the fresh infections where spores have not developed. Owing to this, and to a better knowledge of the life-history of the fungus in this country, the Board withdrew the Order demanding destruction of diseased bushes, although destruction is still recommended where bushes are old and badly diseased.

(2) Owing to the success of spraying in the control of other fungous diseases (*e.g.*, Apple scab, etc.), many growers are convinced that disease can be controlled by spraying alone, but this has been proved impossible in hundreds of cases. There are several reasons for this. Up to the present the perfect spray has not been discovered, nor is this likely, while spraying is only of value in preventing a fungous disease, and not in killing the fungus once it has established itself on the host. The fungus being a plant, it is improbable that any spray will kill it and not kill the host, or at any rate cause the death of the leaves and young shoots on which it lives. In the winter, when a stronger spray could be used, the first effect is to rot the "spawn" or mycelium, and so cause the perithecia to fall to the ground quicker than they naturally would do, and no spray has been found that will penetrate the wall of the perithecium and not injure the host. Secondly, in practice it is impossible under ordinary conditions to cover each shoot with the spray, and no one who has seen the ordinary labourer spraying will ever think that it will be effective in this disease. In the third place, owing to the nature of the attack, spraying to be of any value must be continuous throughout the growing season. The resting stage of the fungus lies in the soil, and there is evidence to show that (1) conidia are released in favourable circumstances all through the growing season; (2) they may lie dormant in the soil throughout at least two winters. The result of this is, that there is constant infection concurrent with constant growth, and as only the tips of the shoots (the length of the tip varying with variety and conditions) are infectible, it follows that spraying must be done every few days in order to keep the new shoots covered. This may be done as a scientific experiment, but the cost makes it impracticable to the market grower.

Notwithstanding this, spraying is of value in cases where disease has only recently appeared, and where soil infection is slight or absent, but the ordinary grower seldom notices the presence of disease until it is established in his plantation. Spraying is also of value in keeping the fruit free until it is ready for market, but, apart from such instances, to spray a badly infected plantation is to waste money.

(3) *Treatment of Soil.*—Many substances have been added to the soil underneath infected bushes with a view to killing the "winter spores," but no definite success has attended such treatment. Lime hoed in under the bushes in March and April has seemed to do good in certain cases, and it has the merit that the lime is valuable as manure if of little value as a fungicide.

(4) The controlling of a disease by pruning away the affected part is only possible where the part is not a vital one and where the infection is localised. In American Gooseberry mildew the disease is not only visible, but external and localised on shoots, the extent of infection varying with growth and other factors. Thus disease is obvious and can readily be removed. The question is complicated by the fact that the disease does not remain on the tree, for the resting spores fall, sooner or later, to the ground, and also by the fact that similar spores are developed on diseased fruit and also fall, while if infected shoots are removed too soon fresh growth is made which may become infected later in the season. Diseased fruit must be removed promptly before the brown stage has developed far, but as regards shoots a period must be found when diseased tips (ends of shoots) can be removed without further growth taking place, and while a large percentage of the perithecia are still attached to the shoots. This varies with season, age and condition of bushes. Old bushes sometimes ripen very early, and therefore can be tipped early; but young trees, if autumn is wet, may continue to grow even as late as end of October. In practice, however, the removal of tips in the early part of September on average trees seldom causes fresh growth the same season, and unless disease is high in intensity a large proportion of perithecia are still on the shoots. If the season is dry oldish bushes may be tipped even in August with perfect safety. In very bad cases, where intensity is high early in the season, good results have followed removal of diseased fruit and tips as early as the end of June, the fresh growth in October being small and only slightly affected with "winter stage," which, of course, has to be removed. In such bad cases, if the double tipping is not done, the ground is infected for the next year as early as July. From a theoretical point of view it seems obvious that if an external disease like the one in question is concentrated on the tips of the shoots the removal and destruction of the latter must remove the greater part of the infection: in practice this has proved to be the case.

There are two chief difficulties in carrying this out. Firstly, it usually has to be done when the bulk of the fruit crop has to be picked and all available labour is put to this. The fruit-grower has always been able to neglect his Gooseberry bushes and to prune or cultivate them at his own convenience, while any neglect has not necessarily meant loss of crop. Where mildew is prevalent Gooseberries must be "cultivated" and, if required, tipped at an inconvenient time for the grower, or he will suffer loss. Fortunately this is a simple matter and can be done by unskilled labour, women and boys doing it very successfully.

Secondly, tipping, especially if severe, may cause the formation of a dense growth, which not only encourages mildew by preventing air from freely circulating through the bushes, but makes picking very objectionable. This difficulty does not always occur, as certain varieties—*e.g.*, Lancashire Lad—do not object to tipping, while it has been accentuated in many instances by a large proportion of the undiseased shoot being cut off. Where bushes have been neglected this has also meant that much of the fruit-bearing wood has been cut away with subsequent reduction of crop. Consequently tipping is not favoured by growers of neglected bushes, the older parts of such bushes not bearing fruit. In certain parts of Sussex and elsewhere healthy bushes are tipped annually, with the result that such districts are largely free from mildew and the bushes develop a large number of "spurs" on the old wood, which produces fine dessert fruit.

Where bushes, such as Whinham's Industry, become very dense owing to tipping, the centre of the bush should be kept open. Although largely grown, this variety is not popular, and it will probably go out of cultivation owing to the fact that the fruit is very susceptible to attack. If growers would continue to tip bushes after the first two or three years so that the wood "spurred," they would get a good crop of fruit on smaller bushes, and by keeping the bush open in the centre the wood would ripen quicker and be less liable to attack by mildew.

Early tipping of trees is undoubtedly unpopular with many growers for reasons mentioned already, and because they have not faith in its value as a means of checking the disease. Experience of tipping extending over the last six years has shown that in the majority of cases the tipping of diseased shoots in September and October, consistently done, has kept the disease in check, and notwithstanding the talk of every garden containing Gooseberries being diseased, there are hundreds of growers who have had disease on their bushes at one time or another, but who have never seen a diseased berry, while in nearly every case neglect of or late tipping has sooner or later resulted in the loss of crop even though bushes have been sprayed from time to time. The worst cases that are ever seen are always where disease has not been reported and only ordinary pruning has been done. On the other hand, cases are known where the crop, owing to such neglect, has been lost one year, and as a result of early tipping a clean crop has been gathered the following year. But this is not always the case, as neglect means thorough infection of the soil, and this is only remedied by early tipping and other measures extending over several years. *G. C. Gough.*

(*To be continued.*)

ORCHID NOTES AND GLEANINGS.

ONCIDIUM LEOPOLDIANUM.

The flowering of the rare Oncidium Leopoldianum in the collection of H. S. Goodson, Esq., Fairlawn, Putney (p. 99), and the further particulars of its habitat (p. 246) are interesting, for the writer had no information on this head when describing the species nearly twenty-five years ago. The information affords an interesting confirmation of the suggestion made some fifteen years later, when a plant from the original importation flowered in the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, and proved to be the allied O. corynephorum, Lindl., a handsome species described over sixty years earlier from dried specimens collected by Matthews at Moyobamba, and till then unknown in cultivation. The circumstances justified the suggestion that the two species "grow together, and as often happens in the O. macranthum section, may be confused when out of flower." We have now evidence that both the species grow at Moyobamba. It is, however, difficult to understand the remarks that the two were supposed to be identical, "an error that is now proved," and that O. Leopoldianum was "said to be synonymous" with O. corynephorum, for this is just what I did not say in the article (*Gardeners' Chronicle*, 1885, ii., p. 340, fig. 130), which your writer cites. I clearly pointed out the differences between the two species, and added: "A few other plants are known, and it will be interesting to see what they are when they flower." We are still without the information, for we do not know the history of the plant of O. corynephorum which afterwards bloomed with Messrs. Armstrong and Brown. *R. A. Rolfe.*

[O. corynephorum was certificated under the name of O. Leopoldianum, hence the ground for confusion to which reference was made in our notes.—Eds.]

FLORISTS' FLOWERS.

PELARGONIUMS FORTY YEARS AGO.

Although I cannot carry my memory for seventy years, yet the extract from the *Gardeners' Chronicle* for 1844, published on p. 297 of last issue, was interesting to me. For about forty years I have been more or less in touch with the new plants put into commerce by British and Continental nurserymen. A striking feature is the difference in prices between the novelties distributed at the present day, and those of even forty years ago. Your correspondent of seventy years ago referred in all probability to the show Pelargoniums which were then and for many years afterwards greatly appreciated. In those days the Zonal-leaved varieties were generally spoken of as "Geraniums." The remark in the extract of a guinea or guineas being charged for a single plant is readily understood, as in a catalogue of new plants distributed by Messrs. Rollisson, of Tooting, in 1858, when prices were a little easier, for no fewer than ten of the new show Pelargoniums a guinea and a half each was charged. The raisers of those days were Beck, Dobson, Foster, Hoyle, Storey and Turner. In the catalogue of Messrs. Henderson, of St. John's Wood, for 1875, the same price was still demanded, but only for two of the varieties offered. The year 1875 was noteworthy for the fact that the first double-flowered Ivy-leaved Pelargonium was distributed. This was the variety Koenig Albert, which I think has long since disappeared. The price was 15s. per plant.

In returning to the show Pelargoniums, it may be noted that by 1881 all the above-named raisers had dropped out except Mr. Foster, of Clewer Manor, near Windsor, a selection from whose seedlings were annually distributed by the late Mr. Charles Turner, of Slough. In his catalogue for 1881 the guinea and a half was seen no more, the prices charged being 15s. and one guinea.

Soon after that time the show Pelargonium began to decline in popular favour, owing to a great extent to the fact that in order to obtain flowers that fulfilled the ideal of the old-time florist, so much in-and-in breeding took place that the plants were weakened, and could not hold their own for general purposes with the more vigorous and less correctly marked forms to which the name of "decorative" is generally applied. Now the old florists' type of show Pelargonium is almost gone, though the title of "show" is still seen occasionally. Some of Mr. Foster's latest seedlings were remarkable for their brilliant colours, but the habit was poor and the trusses of bloom small.

Another period of high-priced Pelargoniums occurred in the latter part of the sixties, when the tricolour-leaved varieties were all the rage and guineas were freely paid for the best of them. *W. T.*

EARLY CHRYSANTHEMUMS.

Apropos of the note on this subject printed on p. 300, I may say that early Chrysanthemums have done remarkably well here this year. The earliest commenced flowering in the first week of August, and I cut a large quantity of flowers to-day. If the weather be favourable I have hopes of cutting for another fortnight. Being rather high, we do not get the frosts till late in the autumn. The plants were propagated from cuttings in January, set out in boxes, hardened off, topped and planted late in April. The ground selected was a very good border in the kitchen garden which had been trenched and manured for two successive years. The plants were watered immediately after they were set out, but the water-pot has not once been used on them since. They form now a huge mass of flowers and are the admiration of all who see them. The varieties are by no means new, for in the list given on p. 300 only two varieties of our collection are mentioned. *William F. Rowles, Ellisfield Manor Gardens, Basingstoke, October 30.*

OAKLANDS, WIMBLEDON PARK.

Immediately on entering the Surrey estate of Mrs. Berry de Brown the visitor is impressed by its delightful situation. The garden front of the house commands views of the distant hill-side, whilst in the valley below is situate the Wimbledon Park estate, which was recently acquired, partly through subscription, by the Borough Council for the public. Throughout the summer the flower-beds on the terrace have been brilliant with colour, supplied chiefly by Paul Crampel and Mrs. Parker Pelargoniums. At one end of the terrace there is an unusually fine winter garden, which was erected quite recently by the Sycamore Works Company. The large structure, which is built of Teak wood and glazed with large panes of mottled glass, is of exceptionally graceful design and in perfect harmony with the residence. This winter garden is used a great deal by Mrs. Berry de Brown, who prefers the quiet restfulness of foliage rather than the brilliance of flowering plants which is the general rule in conservatories. The end wall and the back are masked by rockwork planted with Asparagus Sprengeri, A. plumosus, many Ferns, trailing Tradescantias, and foliage species of Begonia and similar plants, with very good effect. A sufficiency of tables and chairs is set amongst the large groups of Palms, Ferns and other ornamental foliage plants, which are tastefully arranged on the tiled floor. But although the chief effect is obtained from the cool, restful green of such Palms as Kentia Forsteriana and Cocus flexuosus, and large specimen Maidenhair Ferns, these plants are relieved by occasional batches of seasonable flowering plants, and also by excellent examples of Acalypha macafeana, and the best varieties of Begonia Rex. During the Chrysanthemum season the general rule is relaxed and many pots of large-flowered varieties are placed in the groups. In spite of the exceptional drought the large, gently-sloping lawn has been beautifully fresh and green, thus forming an ideal framing for the many beds of Roses which luxuriate in the rich, loamy soil. The Hybrid Tea varieties have been specially floriferous.

The herbaceous borders intersect the kitchen garden, and at the present season a splendid collection of Michaelmas Daisies and the best garden varieties of Dahlia make attractive displays. Tall stems of many Hollyhocks, bearing their last blooms and numerous seed vessels, are sufficient evidence of their magnificence during the summer months, when Delphiniums, Erigerons, Oriental Poppies, Heleniums, Paeonies, Lupins, and many other plants were also in their full glory.

In the kitchen garden the crops evidence the same careful attention from Mr. J. H. Payne, who, for the past five years, has had charge of the gardens, and who during this time has gained considerable repute as a successful exhibitor of stove and greenhouse plants and of tasteful groups of plants at the flower shows held at Richmond, Roehampton, and other places. Plums, Peaches, and Pears are the favourite fruits at Oaklands, so one finds the kitchen garden walls well furnished with trees of these kinds, and the contents of the fruit-room tell of good crops of the latter fruit and of Apples. The glasshouses, which are situated in the kitchen garden, contain successional batches of plants for the decoration of the winter garden, and the ripening growths of Peaches and laterals of the Vines all promise good crops for next year. Melons are also a crop of the past, and the glasshouse which contained this fruit is now occupied by sturdy, short-jointed plants of Dawkins' Sceptre Tomato, already ripening the first fruits. No account of Oaklands would be complete without mention of the enviable gardener's house and comfortable bothy which Mrs. Berry de Brown has built; thus showing in a practical and praiseworthy manner the deep interest she takes in her garden. *B.*

NOTES ON CONIFERS.

I.—CUPRESSUS TORULOSA.

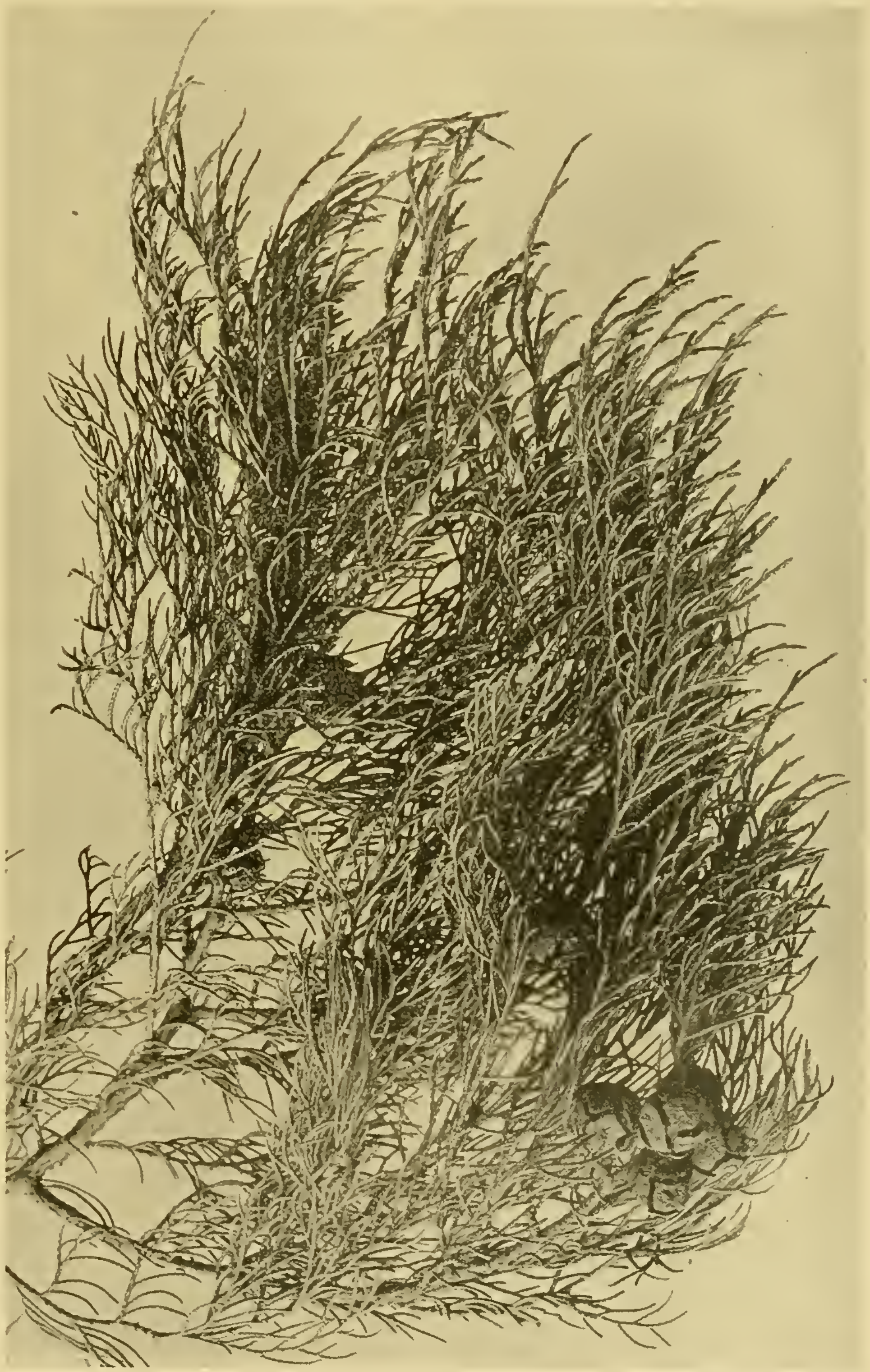
This beautiful Cypress was at one time fairly frequent in our Conifer collections, but on account of its susceptibility to severe frosts is now seldom met with except in the more sheltered parts of the British Isles, where the climate is mild. The best trees of Cupressus torulosa, Don (see fig. 122), are found in Devonshire and Cornwall. One of the most notable specimens is at Killerton, near Exeter. When measured in 1905 this was 65 feet high by 5 feet 4 inches in girth at 5 feet from the ground and was in excellent health. I saw trees from 35 to 45 feet high at Pencarrow and Tregothnan in Cornwall during 1908-9. Elwes and Henry* mention others at Heanton, Satchville, North Devon, at Haldon House, Exeter, and at Melbury, Dorset, the latter belonging to the variety corneyana, which is distinguished by its drooping branchlets. In April, 1908, I was shown an avenue of this species in the garden of Mr. Hargreaves at Cuffnells Park, Lyndhurst. This consists of nine trees, on each side of a walk, the trees having been raised from seed brought from India in 1860. They are now about 45 feet high by 4½ feet in girth, and have the characteristic conical habit of this species.† In the Midlands there are trees at Eastnor Castle, Herefordshire, and at Hewell Grange, near Redditch, and recently I have discovered two trees in the pleasure grounds at Woburn Abbey. These were probably planted in Forbes' time, although they are not mentioned in *Pinetum Woburnense.* The taller of these is 38 feet high by 5 feet in girth. I have also seen a small tree at Riverhill, near Sevenoaks. In Ireland there are trees at Fota and Powerscourt.

In a wild state this Cypress is only known from the outer ranges of the Western Himalayas, where it grows on limestone from 5,000 to 9,000 feet elevation and has a somewhat local distribution. In some localities here it attains a great size, trees 150 feet high and 37 feet in girth being on record. The timber is very durable, and is used in India for building purposes and for railway sleepers.

The history of the species is as follows:—First described by David Don in his *Prodromus Nepalensis*, p. 55 (1825), on material collected about twenty years previously in Nepal by Buchanan-Hamilton, it was introduced into European cultivation by Dr. Wallich in 1824. Further supplies of seed were sent to England in subsequent years, but though it was planted at many places a large number of trees have been killed by severe winters. Trees at Gunnersbury Park and Dropmore were cut off by frost in 1867-8,‡ and others at Kew suffered a similar fate in 1895.§ Lawson (*Pinetum Britannicum*, II. [201], 1884) states that out of 52 specimens in England 34 were killed outright and 11 injured during the winter of 1860-61.

The illustration (see fig. 122), which represents a branch from one of the Woburn trees, shows well the characteristic arrangement of the branchlets, which form a useful character for distinguishing the Himalayan Cypress from allied species.

The foliage is said to be noticeably fragrant on a windy day on the leeward side of a tree.‖ *A. Bruce Jackson.*



[Photograph by E. J. Wallis.

Fig. 122.—Cupressus torulosa.

---

* *Trees of Great Britain and Ireland*, V. 1163 (1910).

† Elwes and Henry, l.c. V., t. 294.

‡ *Gard. Chron*, 1868, pp. 152, 465.

§ *Kew Bulletin*, 1896, p. 8.

‖ Hood in *Gard. Chron.*, 1847, p. 766.

NOTICES OF BOOKS.

THE DAFFODIL YEAR BOOK.*

The *Daffodil Year Book* for 1914 forms the second annual volume of the series. In the first 85 pages the Rev. Joseph Jacob has collected a number of short articles of interest to growers.

The first article is by Mr. G. W. Leak, on "The Season of 1914." This is not, as might be surmised from the title, a talk about the weather, which is only incidentally mentioned at the end, but rather a description of some of the Daffodils shown during the year. One of the additions to our Daffodils which is being sought for most eagerly is a really hardy and good deep yellow Daffodil, flowering late in the season. Sir F. W. Moore, writing on Daffodils in grass, echoes the wish, but also asks for a tall growing variety. For his special purpose this seems a doubtful advantage. In the open field or park the Daffodil has to endure the buffeting of much wind, and often the passage of animals, and in these conditions a tall stem is often a source of weakness.

The raising of new seedlings by crosses from the garden varieties have now been carried so far that it is not surprising to find hybridisers looking out for fresh blood in the shape of new species, with which to attempt to obtain a fresh break. The subject is discussed by the Rev. G. H. Engleheart, who directs attention to Galicia and the north-easterly corner of Spain as at present the most promising fields for new discoveries.

Mr. G. Stocks contributes an elaborate treatise on the Daffodil fly, Merodon equestris, the history of which he traces literally *ab ovo*.

Mr. Jacob himself gives a descriptive account of 90 new or prominent flowers of 1914, several of which are illustrated by photographs. Of these illustrations the pictures of Florists' Favourite, Elphin, Lord Lister and Crystalline are perhaps the most pleasing. Mrs. D. V. West is depicted twice, the first illustration showing the flower as grown in this country, the second as grown in Australia, where it was raised, and where it is said to do better than any imported variety. It is evidently a fine bloom, and as it is illustrated the Australian flower seems to have a longer and less expanded cup than that from the English-grown plant.

The volume contains photographs and short biographies of several celebrities among Daffodil growers. Appropriately enough, these are headed by Mr. J. G. Baker and the late Mr. F. W. Burbidge.

Considerable space is devoted to the times of flowering of different varieties in this country. The annual is, however, by no means confined to the doings of British or even European Daffodil growers, for it contains accounts of the interest taken in the flower in America, California, Australia and New Zealand. It is interesting to trace the manner in which the Daffodil seems to have gradually changed its time of flowering to suit the conditions of the Antipodes.

The last part of the volume, pp. 86 to 140, is taken up with accounts of Daffodil shows and other like matters. This part of it comes within Charles Lamb's description of books which are no books, and calls for little comment except that it is given at rather unnecessary length. The volume concludes with the schedule of prizes for the show in April, 1915. On this the best criticism is the picture of the 1914 show given opposite p. 86. A white background is one of the worst against which to show the Daffodil, and the depressing uniformity of the rows of vases, each containing exactly three flowers, can scarcely have failed to escape the notice of visitors. Is it too much to hope that we may some day see the baskets and artistically arranged vases and tables referred to by Mrs. Francis King in her account of the Daffodil in America finding a place in the Westminster schedule, and that some effort may be made to provide classes likely to encourage the small cultivator? *H.*

---

* *The Daffodil Year Book.* Published under the direction of the Royal Horticultural Society. (W. Wesley and Son. Price 2s. 6d.)

"LET GLASGOW FLOURISH."

SWEET PEAS IN A CITY PARK.

I was in Glasgow on October 7, giving a lecture on "Sweet Peas" to the Glasgow and West of Scotland Horticultural Society, and at the meeting Mr. Whitton, V.M.H., put up an exhibit of sixty bunches of grand Sweet Peas which had been grown by one of his superintendents, Mr. John Williamson, at Bellahouston Park. The flowers were large, clean and well staged with plenty of their own healthy foliage. Such a display surprised me. Grown within two miles of the centre of the city, and in such fine condition in October, I looked upon the display as a tribute to the Sweet Pea. The following morning found me in Bellahouston Park, piloted there by Mr. Smellie, the chief of Mr. Whitton's office staff. We soon found Mr. Williamson. In answer to some queries he informed me that the park is 185 acres in extent, and that it is only one-and-a-half mile south-west of the centre of the city. The Sweet Peas are grown in what was once the garden of the old mansion house of Ibroxhill. It is surrounded by a high wall and the soil is a medium dark loam, which doubtless has been in cultivation for a century or more. I found the Sweet Peas all grown in clumps and still full of bloom from about three or four feet from the ground to the tops, which were 9 feet high and about 3 feet in diameter. Elfrida Pearson, King Manoel, John Ingman, King White and Mrs. C. W. Breadmore bore three bloom-sprays in abundance and flower-stems 12 to 15 inches long. Rain had been plentiful since the beginning of August. This no doubt largely accounted for the fine display so late in the season, but much is also due to the method of culture. I found the seeds were sown in boxes in the first week in February. The plants were not transplanted. They were grown as hard and stubby as possible in frames and planted out in April in clumps of five plants. Very little disbudding was done. The arrangement as to staking is this. A very strong stake is put firmly in the centre and a circle (2 feet diameter) of wide-meshed wire netting is fixed to this. It suits admirably. The ground is prepared in autumn by being trenched two spits deep and the bottom moved with a fork. Plenty of old manure is dug in with a little bone-meal and superphosphate. It is left undisturbed till two weeks or so before planting, when a dusting of slaked Irish lime is applied and the surface pointed over and levelled ready for planting. About fifty sorts in all are grown. From the season's observation Mr. Williamson has found the following most satisfactory throughout:—Arthur Unwin, Edrom Beauty, Elfrida Pearson, John Ingman, Isobel Malcolm, King White, Lavender George Herbert, King Manoel, Maud Holmes, Mrs. Cuthbertson, Mrs. C. W. Breadmore, Mrs. R. Hallam, Mrs. Routzahn, Rosabelle, R. F. Felton and Thomas Stevenson. There was no sign of running of colour in any of the edged or bicolor varieties, and there was no streak or disease of any kind. Mr. Williamson does not grow Sweet Peas two years in succession on the same ground.

At this season the other effective features of the garden are the collections of early-flowering Chrysanthemums and Collerette Dahlias. The finest thing, to my mind, in Chrysanthemums was Craigmillar, a grand yellow about 2 feet in height. Balmoral and Goldstein were outstanding in the Collerette Dahlias. There is a fine border of Heaths and another of hardy Ferns, and a big rockery in course of construction.

In conclusion let me congratulate Mr. Whitton on having everything in the garden named. *W. Cuthbertson, Duddington.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Pruning and Training Wall-Trees.—The pruning and training of fruit trees on walls should be pushed forward on favourable days so that as much as possible of the work may be completed before the winter. The operator should place planks on the border, as then not only will the work be done more comfortably, but trampling of the surface will be prevented. The Morello Cherry drops its leaves early, and a start may be made with these trees. Where summer pruning has been attended to not much time need be expended on the trees. First saw out any of the larger branches that are worn out, then remove rough snags and all weak shoots that are not required for filling the space. The pruning should follow the lines adopted for Peaches and Nectarines—that is, cut out as much of the old fruiting wood as can be dispensed with and train in its place well-ripened shoots of the current year. It is best to do the pruning before the trees are loosened from the wall. as the operators will then be able to see what shoots can be spared and what are necessary to furnish the wall space. Neglected Morello Cherries may be renovated in a much shorter time than is necessary in the case of most fruit trees. It is necessary to train in almost all the healthy young wood and remove worthless shoots, but the cutting out of much growth at one time is not to be recommended. After the trees are pruned let them be thoroughly cleansed before they are fastened to the wall. Holes in the wall should be made good with cement as they form lurking places for insect pests.

Sweet Cherries.—The method of pruning the Sweet Cherry is entirely different from that practised in the case of Morellos, for the Sweet Cherry fruits best on spurs that are found on the old wood. Pruning and thinning the trees in the summer result in spur formation, and trees that have been summer pruned will require but little attention now. On no account cut out large branches or use the knife more than is necessary, for this is a frequent cause of gumming. If the tree has been neglected the work of pruning must be done with very great care.

THE ORCHID HOUSES.

By H. J. Chapman. Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

The East Indian House.—Many of the Orchids grown in this house have matured their growths, but some, including Aërides, Vanda, Saccolabium and Rhyncostylis are still growing at the roots. Watch the conditions carefully and prevent the atmosphere getting overcharged with moisture when the temperature falls suddenly, as this would be very harmful. Phalaenopsis and other plants with fleshy foliage are very susceptible to injury from sudden changes in the weather; a chill will frequently cause the foliage to become disfigured, and even to drop. Specimens of Phalaenopsis, with flower-spikes developing, should be grown in plenty of light to prevent the inflorescences from becoming drawn. Directly Vanda Parishii, Saccolabium and allied Orchids with fleshy roots have finished growing they will need only very little root moisture. Where such plants have to be grown in houses that are kept damp for other occupants it is wise to remove some of the Sphagnum-moss and potting compost to prevent them from becoming unduly moist whilst they are at rest.

Seedling Calanthes.—The seeds of many kinds of Orchids have been longer in germinating this season than usual, and some of the seedlings are only just ready for transplanting, but this work should be done now without delay. Some allow seedling Calanthes to remain in the seed-bed over the winter, transplanting them in the spring, but there is a danger in this, for it is often a trouble to find the tiny plants after their foliage has withered, and they are liable to become dried up. This is specially true when the seeds have been germinated in the pots of the old plants, for it is necessary to keep the compost dry to rest the parents. For seedlings employ very small pots and fill them two-thirds their depth with clean broken crocks. Use a compost of two parts finely-chopped fibrous peat and one part Sphagnum-moss. Prepare the pots in advance, trimming the surface neatly by clipping, and give the material a good soaking. It is my practice to place several plants together in the same receptacle, but care must be exercised in doing this or the roots will be injured. Take measures to prevent damping, and grow the plants in a warm place next to the roof glass, where they will not only obtain plenty of light but the conditions will be drier than on the stage. Reduce the amount of root waterings as the foliage dies. Plants that are looked after carefully frequently flower the following autumn after potting.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Camellia.—The flower buds of Camellias are now swelling, and care is needed in watering, for if the roots become very dry the flower buds will drop. Keep the foliage clean by sponging; soap and water with the sponge will remove the black deposit that is often found on the leaves, also white scale insects on the branches. At this stage the plants may be fed with manure water or a concentrated fertiliser.

Solanum capsicastrum.—If the berries are not yet coloured employ a little more heat and feed the roots with weak liquid manure water. Aphis is a common pest of these plants, and the house should be fumigated at intervals.

Callicarpa purpurea.—This plant is very attractive just now with its bunches of lilac-coloured berries. The plants should be grown at the warmer end of the conservatory or in the intermediate house.

The Show House.—Keep the conservatory as light as possible, removing all superfluous growths from such climbers as Cobaea scandens, Ivy-leaved Pelargoniums, also Fuchsias, Heliotropes and other plants that are trained to the pillars. The brightest subjects now are the Chrysanthemums, and these should be arranged so that their colours harmonise; for example, bronze may be associated with yellow, pink with mauve, whilst red and white go well together. Dwarf bush plants may be arranged on the stages in batches in proximity to Salvia splendens, Zonal-leaved Pelargoniums, white Marguerites, Heliotropes, and Browallia speciosa major. Keep the atmosphere somewhat dry, as Chrysanthemums are liable to damping. Admit air on all favourable occasions, and use a little fire-heat when the nights are damp and cold to evaporate excessive moisture.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Planting.—November is the busiest month of the year as regards the planting of shrubs and trees, and the thinning and transplanting of others which may require more room to develop. A few specimens of hardy flowering shrubs, planted 6 to 12 feet apart on turf, and allowed to develop naturally, produce a far better effect than do crowded belts of mixed shrubberies. Single specimens may consist of Forsythia suspensa, F. Fortunei, Ribes sanguinea, Spiraea aërifolia, Weigela Eva Rathke, Buddleia Veitchii, B. magnifica, Viburnum plicatum, and other deciduous kinds. Of evergreens Berberis stenophylla, B. Darwinii, Osmanthus, Veronica Traversii, V. salicifolium and V. Autumn Glory, Azara microphylla and A. Haastii may be employed, as well as Rhododendrons where the soil is suitable. Among the single specimens an occasional group of plants may be interspersed, such as Hydrangea arborescens, H. grandiflora and H. paniculata, Hypericum patulum, H. multiflorum, H. Moserianum, and the double-flowered Gorse. A methodical and judicious selection of these may surround the lawn, whose boundary may be allowed to lose itself amongst the shrubs instead of being emphasised by the usual hard and fast line of shrubs which have to be constantly trimmed and entail much labour. Many recently introduced shrubs may be added, also the improved varieties of Philadelphus. Deutzia, Lilac, Styrax, Stephanandra and Genista. A garden is incomplete without a few berry-bearing shrubs for winter effect. Now is the time for planting Cotoneaster frigida with its large panicles of scarlet berries. Crataegus pauciflora, C. Pyracantha Lalandii, Berberis communis, Hollies in variety, especially Ilex camelliaefolia, and the Snowberry (Symphoricarpus racemosus), planted in conjunction with Euonymus europaeus (Spindle Tree), are all very beautiful when in berry.

Dahlia and Begonia.—In this district frost has destroyed the foliage of these plants, and the roots should be taken up, dried gradually, labelled and stored for the winter. It is an advantage to keep the roots of Dahlias plump, and they may be stored in a cool, dry cellar or in a shed which is frost-proof. After the corms of Begonias are dry they should be cleared of rubbish and soil and stored in sand.

Lawns.—The summer has been unsuited to grass, and many bare patches will be found in the turf, especially on steep slopes or dry banks; these should be remedied. Newly-made lawns may need levelling, for it may be found that ground that was made up, such as where tree stumps were removed, has sunk in places. The best way to do this is to remove the turf in a thin layer, rolling it back and filling up the hollows with fairly rich loam. When the turf is replaced see that it is perfectly level by means of the straightedge, taking care to heat it quite firm. Take every opportunity that affords to roll the turf, as this is a great preventive of moss on lawns. The waste pieces of turf from patching may be mixed with road scrapings to form compost, and if old turf is available from the pasture the heap may be made to one of considerable size, as compost of this nature is valuable for many purposes.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Seakale.—A frost will now be sufficient to cause the leaves of Seakale to fall and then the first batch of crowns may be lifted. Seakale differs from Rhubarb, in that it can be induced to make new growth immediately the leaves have fallen, provided the roots are placed in a very high temperature. But once growth commences the receptacle in which they are being forced must be transferred to a much cooler house or frame, otherwise the flavour will be inferior. A packing-case, such as a soap or sugar box, is suitable in which to plant the crowns for early forcing. Leaf-mould is employed here as plunging material for the roots, but anything that retains moisture will serve the purpose, for Seakale possesses the property of being able to grow without soil, as anyone can prove by laying the roots out flat and keeping them wet and warm. In forcing, therefore, all that the cultivator has to bear in mind is to supply the conditions best calculated to induce the production of a growth which obviously has been previously provided for by the plant. Perfect darkness must be ensured whilst forcing continues.

Asparagus.—Strong crowns of Asparagus may be forced with ease in ordinary manure-heated frames. Place the roots on a layer of leaf-mould and cover the crowns with the same material to a depth of several inches. It is not necessary to ventilate the frame. The plants in the permanent beds should be top-dressed with a few inches of soil after the stems have been removed; if the beds are raised, with alleys between, the cleanings from the latter with the addition of old compost and rotted manure will do good and give the beds a neat appearance.

Broccoli.—Early Broccoli has been disappointing, for the heads developed prematurely, and there is every promise of a gap in the supply before the mid-winter crop is ready. In severe weather some protection is necessary; in very cold districts the simple method of cutting the roots with a spade may be resorted to, as this has an appreciable effect on the preservation of the plants. Plants growing in very heavy soil may be lifted and laid in rows with the heads facing north, close enough together for the leaves of plants in one row to protect the heads in the next. With a spade mark off a space 5 feet from the initial row and throw out a deep furrow wide enough to hold and cover the roots and stems. I have seen plants merely turned over in a slanting direction, but this is no better than cutting the roots with a spade, and, as the space for the worker is cramped, many of the leaves become broken in the process.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

The Vinery.—Let the earliest vinery be well ventilated in order to give the vines a long period of rest before they are pruned and made ready for forcing. When the time for pruning arrives let the work be done with all possible speed.

Peaches and Nectarines.—Houses in which trees are grown for successional fruiting should be kept as cool as possible. If the leaves are still hanging and the general condition of the trees shows that the wood is still immature use a little fire-heat but continue to ventilate freely. The soil should be in a moderately moist condition, but take care not to over water it.

Pineapples.—Very careful management is necessary to obtain ripe Pines in May and the early part of June. Such plants as are intended to furnish fruits at the time mentioned need special attention during the next six months. They should be grown in a bottom heat not higher than 75°, and in such conditions the roots will not require much water, for they need only sufficient moisture to prevent the soil from drying completely. Keep the atmosphere dry, and maintain a night temperature of about 60°; during the day the temperature may rise 5° or 10°, but take advantage of every opportunity to admit plenty of fresh air. Young plants must not be grown in too much heat at this time of the year; it will be sufficient for these if the night temperature is about 58°. Continue to treat fruiting plants as advised in a former calendar. Any fruits that are not required for use immediately should be retarded in a late vinery or cool, dry room.

The Orchard House.—The work of re-potting and top-dressing fruit trees in pots demands attention, but before proceeding to do this make a careful examination of each specimen to ascertain what is necessary in this respect. Where the soil is sweet and the roots not cramped for space re-potting will not be necessary, but some of the top soil may be removed and replaced by fresh compost, making it firm. Trees growing in sour soil need re-potting entirely, and usually the same pots can be employed again. Trees that need a shift should have the roots denuded of about two-thirds of the old soil and re-potted in fresh compost. With careful management fruit trees continue to give good results for many years without employing larger pots. But young trees that are in a fruiting condition and not making too much wood may be shifted into larger pots as desired. Fruit trees growing in very small pots need great care in watering during the summer, and it is therefore an advantage to afford a liberal shift until the largest-sized pots are used, when the requirements of the roots may be met by frequent top-dressings and feeding. When the trees have been potted and watered they may be placed together and the pots covered with leaves or dry litter as a protection from frost. The soil for pot trees should consist of turfy loam with additions of crushed bones or well-decayed manure, wood ash, and chalk or lime rubble.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Special Notice to Correspondents. — *The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENTS FOR THE ENSUING WEEK.

[In the following list of Appointments we have omitted the Chrysanthemum Shows which we have reason to know have been abandoned. It is possible that some of those enumerated may not be held, although we have no information to this effect.]

FRIDAY, NOVEMBER 6—
Eccles and Pendleton Chrys. Soc. Sh. (2 days). Corn Exchange Chrys. and Fruit Show. Derbyshire Gard. Chrys. Sh. (2 days).

SATURDAY, NOVEMBER 7—
Formby Hort. Soc. Chrys. Sh.

MONDAY, NOVEMBER 9—
Gloucestershire Hort. Soc. Sh.

TUESDAY, NOVEMBER 10—
Ulster Hort. Soc. Chrys. Sh. at Belfast (2 days). Dover Hort. Soc. Chrys. Sh. (2 days). Woolton Chrys. Sh. B.G.A. (Watford Branch) meet. (Lecture by Mr. Cyril Harding).

THURSDAY, NOVEMBER 12—
Sheffield Chrys. Sh. (3 days). Nottingham Chrys. Sh. (3 days). Colchester Chrys. Sh. Edinburgh Chrys. Sh. (3 days). Dulwich Chrys. Sh. (2 days). Finchley Chrys. Soc. Show (2 days).

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 44.1.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, November 4 (6 p.m.): 53°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. *Thursday*, November 5 (10 a.m.): Bar. 29.2; Temp. 58°. Weather—Sunshine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY, AND FRIDAY—
Bulbs at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Lilies, and Dutch Bulbs, at Stevens' Rooms, 38, King Street, Covent Garden.

TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, AND SATURDAY—
102,000 Fruit Trees at Veitch's Nurseries, Feltham, by Protheroe and Morris, at 12.

WEDNESDAY—
Trade Sale Bulbs, Liliums, etc., at Protheroe and Morris's rooms, at 3.

THURSDAY—
Special Sale Roses at Protheroe and Morris's rooms, at 1.

Mr. Wilson's Botanical Explorations in Japan.

The following extracts are from a letter written at Tokyo on September 6 last by Mr. E. H. Wilson to Professor Charles S. Sargent, of the Arnold Arboretum:

I have just returned from northern Hondo, Hokkaido and Saghalin, having been absent since June 29. I have had a very interesting time, though somewhat handicapped by excessive heat and heavy rains. So far this year nine typhoons have struck Japan, and I think I must have come in for the tail end of every one.

In Hokkaido I made flying trips in all directions—north, south, east and west—and pretty thoroughly investigated the forest flora of the island. I saw every species of tree which grows there, and photographed virtually all of them. As you well know, the Hokkaido forests are remarkable more on account of the size and abundance of trees than for variety. On one occasion some lumber experts accompanied me into the forest, and with their assistance I was able to fix the "trade" and scientific names of all the more important trees. In Hokkaido the lumber trade is the most important industry, and much of the lumber is exported to America and Europe. The trade names are very interesting; for example, the "Red Ash" of Hokkaido timber parlance is an Elm (Ulmus japonica). In this tree I find names like var. vulgaris and var. laevis are misleading. In adult trees the leaves are always smooth on the upper surface, whereas in young trees and on adventitious shoots the leaves are scabrid above.

Since you are familiar with all the Hokkaido trees, I will only mention three which have received distinctive names since your visit, namely, Acer Meyeri Schwerin, Salix urbaniana Seeman, and Tilia Maximowicziana Shirasawa. The first-named is, I think, nothing but a variety of Acer pictum with the wings of the samaras pointing forward instead of being divergent. The Willow is in all probability the same as S. cardiophylla, and is one of the largest of the tree Willows. It has a huge trunk with deeply corrugated grey bark, massive, wide-spreading branches, and long, broadly lanceolate leaves pubescent and glabrous on the under side. The Linden is a handsome tree with large leaves clothed on the under surface with a pale grey felt. Formerly this tree was confused with T. Miqueliana, a species now considered to exist in Japan only as a cultivated tree.

In the Kitami province I saw extensive forests of Quercus dentata, the bark of which is extensively used in tanning leather. The wood, though hard and tough, is of little value. The most valuable timber tree in Hokkaido is Quercus grosseserrata, and the world's demand for this tree increases annually. As undershrubs in the forests Cephalotaxus drupacea and Daphniphyllum humile abound in certain places. To my mind the handsomest shrub is Sambucus racemosa var. pubescens, which has pendulous panicles of intense scarlet fruits.

In Saghalin I travelled from Odomari to Sakai-hama on the shores of the Okhotsk Sea and investigated the forests at several places. I collected every woody plant I saw, but the variety is very limited, and most of them occur in Hokkaido. The forests in Saghalin are composed of Larch, Spruce, and Silver Fir, with Alder, Elm, Birch, Willow and Poplar scattered through. The valley and woodlands support a luxuriant growth of herbs taller than a man on horseback. Much of the country I saw is well suited for cattle-breeding, but this industry demands more capital than the Japanese have at their disposal. At present the only industries of importance are fishing, collecting seaweed, and making fish manure.

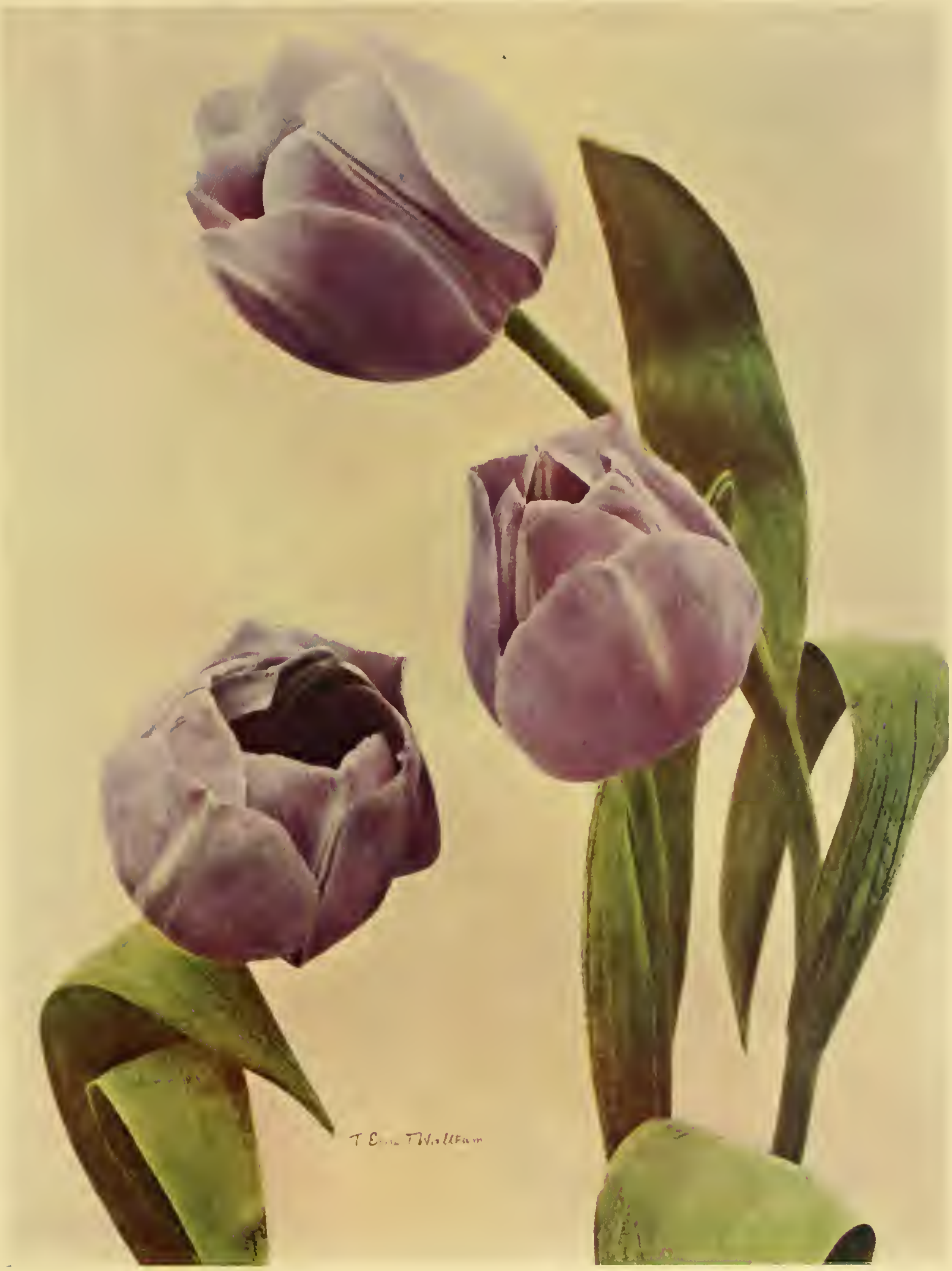
On the coast of the Okhotsk Sea Pinus pumila covers extensive areas. On sand dunes Juniperus littoralis, Rosa rugosa and Empetrum nigrum are very common; in swampy places Cornus canadensis and Vaccinium Oxycoccos luxuriate. The most beautiful shrub I saw was a Honeysuckle which may be L. Chamissoi, Bunge. It is a bush 2 to 4 feet high, much branched, with small, roundish, pale glaucous green leaves and large, round, coral-red fruit. In open herb- and shrub-clad places Crataegus jozana is common. This is a tree up to 30 feet by 4 feet, with ascending, spreading branches and leaves like those of C. sanguinea, but hairy on the under side. I examined many trees, but could find no fruit. In the Sapporo Botanic Garden, however, I secured fruiting material. The fruit when ripe is black and lustrous.

The particular problem I set myself to solve in Hokkaido and Saghalin concerned Larix dahurica var. japonica and L. kurilensis. Some months ago in conversation Dr. Shirasawa stated to me that two kinds of Larch grew in Saghalin, one with red-brown cones, which he regards as L. kurilensis, another with green cones, which he says is L. dahurica var. japonica. Later, at Singapore, I found that Dr. Miyabe held similar views, though he hesitated to supply names.

In Saghalin I found that Larch forms very extensive forests everywhere in swampy places. The trees average 40-75 feet by 3-6 feet; the largest I saw did not exceed 90 feet. One fine old trunk measured 10 feet in girth 5 feet from the ground. The branches are sparse, stiff but slender, horizontally spreading and usually upturned at the extremities. The branchlets are very short and rigid, and the growing shoots are pubescent in a greater or less degree. The leaves are short, and this, together with the short, rigid branchlets and sparse branching habit, gives the tree a naked appearance. On growing trees the leaves are much longer, and the plants appear in consequence much more leafy and rather distinct from the adults. The trees were fruiting freely, and I quickly discovered individuals with red-brown cones and others with green cones, but in no other particular could I find the slightest difference. The form with green cones was much less abundant than that with red-brown cones, and I felt sure the former was merely a variant of the latter. After several hours' search, to my great delight, I found several trees bearing cones in which the scales were half green and half red-brown! This discovery disproves effectually the theory of there being in Saghalin two kinds of Larch distinguished by the colour of their cones.

Many years ago in St. Petersburg Maximowicz told Dr. Miyabe that his Larix dahurica var. japonica was founded on a tree which he (Maximowicz) found growing in Hakodate near a shrine, or temple. Curiously enough Miyabe has never hunted around Hakodate for Maximowicz's tree. Fires have at different times devastated this town, and the chance of finding a tree which grew there some

Supplement to the "Gardeners' Chronicle."



TULIP—WILLIAM COPELAND (Syn. Sweet Lavender).
From flowers forced into bloom in March.

forty odd years ago seemed very remote, but I determined to try.

Fortune favoured us, and through the kind services of the British Consul permission was granted us by the military authorities to photograph the tree and collect specimens (Hakodate is a fortified place, and photography is forbidden under heavy penalty). The tree is about 45 feet tall. flat-headed, with a trunk $6\frac{1}{2}$ feet in girth. Unfortunately there were not any cones on the tree, but the hairy shoots, habit, place where it grows, etc., are sufficient to settle the question of its identity. I searched everywhere else in Hakodate, but could not find another individual of this kind of Larix.

In Hokkaido no Larch occurs in a wild state. Larix Kaempferi has been extensively planted by the forestry officials, and in the extreme north-east, between Kushino and Nemuro, L. kurilensis has been experimentally planted. I had planned a visit to the Kuriles for the purpose of collecting material of the wild Larch there, but a typhoon brought the plan to nought. However, Dr. Miyabe has promised us a Kurile specimen from his herbarium in Sapporo.

Whether L. kurilensis is a good species distinct from L. dahurica can be settled when I return to the Arboretum. But it is certain that L. dahurica var. japonica Max. is identical with Mayr's L. kurilensis.

In Saghalin I discovered and collected Abies sachalinensis var. nemorensis. I understood that heretofore this variety had not been recorded from Saghalin, and all Dr. Miyabe's efforts to rediscover it in the type locality (Nemuro, in north-east Hokkaido) have so far been fruitless. I found this variety to be fairly common a few miles beyond Toyohara, in forests mixed with the type species, Larch and Picea ajanensis. The violet-purple cone with scarcely a bract excepted makes this variety very distinct; in fact, I am inclined to think it is entitled to specific rank.

Picea Glehnii is said to occur in Saghalin, but I did not find it, nor could I glean any information as to where it could be found. In Hokkaido I saw a few trees of this species, which to my mind is the handsomest of all the Japanese Spruces.

In Hokkaido I saw wonderful forests of Picea ajanensis. We must revise our opinion of this tree, for as it grows on its native heath it ranks with any Spruce I am familiar with. It favours northerly and westerly exposures in moist rich valleys and mountain slopes. I have seen thousands of trees 100-120 feet tall; the largest I measured was 18 feet round the trunk at 5 feet above the ground. Even in Hokkaido this tree (and Abies sachalinensis, too) does not take kindly to cultivation.

Coloured Plate. - The Tulip that forms the subject of the Supplementary Illustration belongs to the Darwin section, and is known generally as William Copeland, but it has lately been called Sweet Lavender. It is the finest variety of its colour for forcing, and is one of those flowers that are actually improved by forcing, the colour being more delicate than when the plant is grown out-of-doors. Our illustration depicts the tint the flowers develop under glass rather than the colour of those which open in the garden. Bulbs that were potted up in August and September if introduced to heat now will bloom in January. As with all bulbous plants intended for flowering early under glass, it is important first to plunge the pots in a bed of ashes or similar material in a cool frame, in order that plenty of roots may develop before much top growth is made. Bulbs potted after this date will require a long time in the frame as root-growth will be slower, but these late-potted bulbs may be expected to bloom in March next, if only gentle forcing be attempted until the flower-buds are well developed. The delicate shade of William Copeland is very rare amongst Tulips; the nearest approach is found in the variety Rev. H. Ewbank. This latter variety may also be forced and the flowers will come almost as good as out-of-doors. Other Darwin Tulips that may be recommended for flowering in pots are Antony Roozen (rose, shaded blush), Ariadne (crimson flushed with scarlet, the centre shaded with heliotrope-blue and white), Baronne de la Tonnaye (rose with white centre), Clara Butt (rose), Cordelia (carmine-violet), Erguste (heliotrope), Europe (bright red with rose sheen), Euterpe (rosy-lilac), Fanny (rose flushed with white), Glow (scarlet), Grand Monarque (purple), Julie Vinot (rose), King Harold (dark red with violet centre), La Tulipe Noire (maroon), Loveliness (bright rose with a white centre), Margaret (pink shaded with cream), Mauve Claire (violet-rose), Pride of Haarlem (carmine), Professor Francis Darwin (scarlet), Professor Rawenhoff (cochineal-rose with scarlet glow) and Zulu (dark purple).

Horticultural Club.—In sympathy with the general anxiety experienced during the past two months the Club has so far refrained from holding the usual house dinners that in happier circumstances recommence in September. But the committee has resolved that no good purpose can be served by further denying the members the opportunities of meeting each other in social intercourse which the monthly dinners provide. A house-dinner is therefore arranged for Tuesday, November 17, at 6 p.m., at the Hotel Windsor, Victoria Street, Westminster, when Mr. H. J. Chapman will exhibit a series of coloured lantern slides representing a large number of modern Orchid hybrids and varieties. He will also deliver a lecture entitled "Hybrid Orchids." Ladies are specially invited. The following members have been elected recently:—Messrs. G. D. Clark, Dover; Robert Dashwood, c/o Sycamore Works, Wimbledon; James Kelway, Langport: Frampton Paine, Enfield; William Stanfield, 5, Fen Court, E.C.; and J. B. Walker, Lakelands Nurseries, Windermere. *R. Hooper Pearson, Hon. Sec.*

Mr. Chamberlain and Kew (see p. 247).—In the current issue of the *Kew Bulletin* is printed the following letter from the Right Honourable Mr. Austen Chamberlain to the Director:—"Thank you very much for sending me the *Kew Bulletin* with Sir W. Thiselton-Dyer's memorial notice of my father's connection with the Gardens. I do not know whether you are aware of the full story of the completion of the Temperate House to which he alludes. One afternoon in the House of Commons Sir William Harcourt, then Chancellor of the Exchequer, asked my father to pair with him for dinner. My father replied that he was afraid he could not do that as he was intending to speak on the motion which was then before the House. 'Oh!' said Sir William, 'don't do that, for if you speak I shall have to stop and reply, and I particularly want to keep my engagement this evening.' 'Well,' replied my father, 'I will make a bargain with you if you like. If you will agree to put money in next year's estimates to complete the Temperate House at Kew I will pair with you for as long as you wish.' And Sir William Harcourt, nothing loth, assented. My father at once communicated this to Sir William Thiselton-Dyer, but when the next year's estimates came out Sir William found to his horror that the money for the Temperate House had been struck out. He appealed to my father, and my father to Sir William Harcourt, and the Chancellor, recognising that a bargain was a bargain, directed that a supplementary estimate should be brought in to provide the promised funds. I once suggested to the present Mr. Lewis Harcourt that this characteristic Parliamentary anecdote should be recorded on the Temperate House itself."

War Items.—Our readers will be interested to read the subjoined letters on the subject of the war which have passed between the National Association of Gardeners, Madison, New Jersey, and the Royal Horticultural Society. From the latter it will be seen that the Council of the Royal Horticultural Society has had under careful consideration the question of providing relief for Belgian horticulturists, and that it has reached conclusions similar to those expressed last week in these columns. We thank the many readers who responded so readily to our appeal of last week on behalf of a Belgian refugee, and invite other employers who are willing to provide temporary employment for young men with horticultural knowledge who are unsuited for military service, to communicate with us in order that we may be prepared to deal promptly with further cases that may turn up. The Royal Horticultural Society, which, as our readers know, has provided additional employment in the gardens at Wisley for a number of British gardener labourers, has examined carefully into the possibility of extending similar help to Belgian gardeners. But owing to the fact that there is no house accommodation available either in Wisley or in the neighbourhood, the Council finds itself debarred from carrying out its wishes in this direction. The Universities of Cambridge and Oxford have offered hospitality to the professors of the University of Louvain, and we sincerely trust that the horticultural and agricultural colleges will extend similar help to those Belgians who are willing and competent to undertake work on the land.

"National Association of Gardeners,
Office of Secretary, Madison, New Jersey.

"At the summer meeting of the National Association of Gardeners held in Boston, Mass., August 19, 1914, a committee was appointed to draft resolutions conveying the sympathies of the members of that organisation to the European horticulturists on the terrible calamity which has befallen them. The committee has reported its resolutions as follows:—

"'Whereas our fellowmen engaged in the pursuit of horticulture in its various phases in the European countries are now surrounded by the horrors of a terrible war, many of whom may be suffering from sorrowing anguish for loss of kin on the battlefields,

"'Be it resolved that the members of the National Association of Gardeners convey to their brother horticulturists in Europe afflicted by the war their heartfelt sympathies on the catastrophe which has so suddenly overtaken them; and that our prayer be that the Almighty God in His infinite wisdom will guide the instigators of the appalling conflict now raging to a speedy termination of it, and to everlasting peace.

"'Be it further resolved that copies of these resolutions be forwarded to the various national horticultural bodies in the several countries now at war, and spread on the records of the N.A.G.'
W. N. Craig, Duncan Finlayson, M. C. Ebel.
Committee.

"To Rev. W. Wilks, Sec., R.H. Society of Great Britain, London, England."

"ROYAL HORTICULTURAL SOCIETY, Vincent Square, Westminster, S.W., November 3, 1914.

"Dear Sirs,—The Council of our Society are very grateful to you and to the National Association of Gardeners for the kind and brotherly sympathy which you extend to us and the other gardeners of Great Britain and her allies in the present time of intense strain and distress.

"May we hope that when the time comes for the re-instatement of the Belgian horticulturists we may receive your active co-operation and financial support? Our Society will start a fund of help when the right time comes, but that time, we grieve to say, is not yet.

"With all brotherly greetings to our fellow gardeners in the States, I am, yours very truly, W. WILKS, Sec. R.H.S.

"By order of the President and Council of the R.H.S."

—— Lord Kitchener is now urgently appealing for more recruits, and I know there are still a great number of young gardeners anxious and willing to join the colours. I should, therefore, like to suggest that those joining from gardens should form companies, which could then be attached to battalions as desired. This would give them the feeling of being comrades-in-arms; also those interested would know more definitely where their friends were. I should be pleased if those desirous of enlisting in such a corps would communicate with me, when I think by approaching the authorities the above suggestion could be easily arranged. I believe that a form of conscription will be enforced should the numbers asked for not be forthcoming, and voluntary service is far preferable to compulsory. *W. N. Wright, 62, Spencer Bridge Road, St. James's, Northampton.*

—— A case of Apples, decorated on the outside with the colours of the Allies and photographs of KING GEORGE V., KING ALBERT, the CZAR, and President POINCARÉ, was sold in the warehouse of Messrs. J. LINDSAY AND SON, Edinburgh, on October 29, for £100, and was re-sold time and again until £167 had been realised. Five other cases of Apples realised sixteen guineas. The proceeds went to the Belgian Relief Fund.

—— The Belgian Relief Fund has benefited to the extent of 120 guineas by the sale of a branch of a tree of Apple Bismarck. This bore eleven Apples, eight in one bunch. It grew in the garden of Miss FORREST, Giffnock, who sent the branch to Mr. T. RUSSELL, fruit salesman, Glasgow, who offered it for sale by auction. It was purchased for 25 guineas by Messrs. WOOD, ORMEROD AND Co., Edinburgh, and re-sold again and again until it realised the sum of 120 guineas.

—— The annual exhibition of the Surbiton, Kingston and District Chrysanthemum Society having been abandoned, local growers contributed to a special exhibition in aid of the National Relief Fund. The show was held under the patronage of the Mayor of Kingston, Alderman C. H. BURGE. Many of the exhibitors sold their flowers, fruits and plants in aid of the Fund, to which his Worship stated the district had contributed the sum of £3,392.

MONSIEUR PHILIPPE DE VILMORIN.—We learn from M. PHILIPPE DE VILMORIN that of his four brothers at the front, one, JEAN, is wounded, and that of the other three he has no recent news. M. PHILIPPE, who was appointed interpreter with the Anglo-Indian Army, has been called to London to serve on the International Commission of Army Supply.

THE ROLL OF HONOUR.—We offer our sincere condolences to Lieut.-Colonel Sir DAVID PRAIN, Director of Kew, on the death of his only son, Lieut. T. PRAIN, of the Leicester Regiment, who has been killed in action. Lieut. C. J. A. COWAN, of the Royal Scots, who has also been killed in action, was the eldest son of Mr. ALEXANDER COWAN, Valleyfield, Penicuik, and the grandson of Mr. C. W. COWAN, of Dalhousie Castle, both well-known horticulturists. Lieutenant COWAN was 21 years of age.

SALE OF VEITCHIAN NURSERY STOCK.—Messrs. PROTHEROE AND MORRIS will offer for sale by public auction on the 10th inst. the stock of fruit trees at Messrs. JAMES VEITCH AND SONS' Feltham Nursery. These nurseries have an area of about 40 acres, and the stock of 102,000 fruit trees includes 26,800 Apples, 18,500 Pears, 25,900 Plums, 8,200 Cherries, 5,200 Apricots, 12,600 Peaches and Nectarines, and 4,700 trees in pots, besides Mulberries, Loganberries, Raspberries, Quince and Paradise stools and stocks, Nuts and Filberts, Rhubarb stools, Seakale, and Asparagus. Other subjects for sale are 4,000 Herbs, English Yews, 1,300 yards of Box Edging, and 2,900 flowering plants in pots for forcing. The sale will continue for nine days.

THE SUMMER DROUGHT AT WISLEY.—The following figures of monthly rainfall at Wisley show the severity of the drought from which the gardens suffered :—April, 0.91; May, 1.07; June, 0.77; July, 1.90; August, 1.03; September, 0.71. During the ten preceding years the lowest rainfall for these six months was in 1906, when 7.13 inches were recorded, 1911 coming next with 7.35. The highest summer rainfall during this period was in 1909, when 15,24 inches were recorded for the six months. The mean rainfall for these months (in the years 1904-1914) was 10.34 inches.

"THE AGRICULTURAL JOURNAL OF THE UNION OF SOUTH AFRICA."—Amongst the most useful of the publications and reports issued by the Agricultural Departments of our Colonies and Possessions is that which bears the title of *The Agriculturol Journal of the Union of South Africa.* This publication is—or was—issued monthly, and printed in both the English and Dutch languages, and, as notified in each copy, "issued free of charge to residents within the four provinces forming the Union of South Africa who are interested in Agriculture." From the August number, which recently came to hand, it seems that one of the effects of the war is to stop the publication of this useful journal. The following is the announcement made :—"Readers are hereby notified that, owing to the financial difficulties which have arisen as a result of the hostilities in Europe the Government has been obliged to suspend publication of *The Union Agricultural Journal.* As soon as circumstances permit publication will be resumed, but in the meantime any important announcements that require to be made will be issued through the daily and weekly Press, or through the medium of special leaflets." Amongst the most important articles in the number of the journal under consideration are the following :—"Cotton : How to Make It of Economic Importance to South Africa," which treats of the subject from all points of view, and gives details of cultivation. Under the head of "Markets" the writer gives the following quaint development of the savage to civilisation, and the consequent increase in the demand for cotton. He says :—"As civilisation spreads so does the market for cotton increase. While the practically nude savage is being taught the first rudiments of civilisation a desire is created for garments with which to cover his nakedness. The first step is usually a blanket instead of his former diminutive attire of beads or skins, and the blanket is made principally of cotton. The next step is the wearing of a shirt which is made entirely of cotton, and when practically civilised he wears trousers which are more often than not made from the lint of cotton rather than the wool of sheep. It has been estimated that of the world's population of 1,500,000,000 about 500,000,000 regularly wear clothes, about 750,000,000 are partially clothed, and 250,000,000 inhabitants go almost naked. To clothe the entire population of the world it would require 42,000,000 bales of cotton of 500lb. each." It is to be hoped that this journal may soon be restored to circulation, to the benefit of new cultures and the prosperity of South Africa.

PUBLICATIONS RECEIVED.—***Report of Field Trials with Varieties of Oats.*** Lancaster County Council. (Preston : T. Snape and Co., Church Street.)—***Fertilizer Experiments with Tomatos ; Agricultural Production in West Virginia ;*** and ***Commercial Fertilizers.*** Bulletins published by West Virginia University Agricultural Experiment Station, Morgantown.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

THE LATE MR. HENRY CANNELL.—I was exceedingly sorry to learn of the death of this veteran florist. My acquaintance with him commenced in the year 1884. In November of the following year he showed with much pride, for the first time, a scrap of a Chrysanthemum bloom in the old Aquarium building, and, rubbing his hands, as was his wont, he said, "Ah, my friend, I have something here that will make the public stare, and I am going to name it after you." Some of my friends standing near attempted to belittle the variety, owing to its poor condition, but Mr. Cannell, with his keen insight of things generally, saw much in the scrap of flower he had, and, as events proved, he was correct. Few Chrysanthemums have earned greater popularity than Edwin Molyneux, owing to the brilliancy of its colour. From the millions of seedlings obtained as crosses with that variety not one has approached the parent in colour. *Edwin Molyneux.*

IMPATIENS HOLSTII.—In a note on this plant published in the *Gardeners' Chronicle,* January 24 last, p. 58, it is stated that Impatiens Holstii could not be successfully grown at Kew Gardens as a bedder out-of-doors. It may interest your readers to know that last summer (1913) I had a large bed of Impatiens Holstii in my garden here in rather a cold but sunny situation at the end of a tennis lawn, in which position it flowered from the time of putting it out in June to late September, and this year I tried it again as a border under a pergola in a more sheltered position, where it did admirably well, and was a blaze of charming apricot-scarlet flowers for over three months. *R. B. Lawrence Smith, Priors Court, Newbury.*

DIORAMA PENDULA.—I am enclosing—as possibly of interest to you—two photographs [not reproduced] of a plant of Diorama pendula flowering in my garden here in East Essex this last summer. The plant bore 18 spikes of pink flowers, the inflorescences being about 6 feet long. The plant was raised from seed which I understood came from Mr. Walpole's garden in Ireland. It flowered first three years ago, and seedlings raised from seeds formed that year flowered here this summer. After having been started in a cool greenhouse it was planted in the open, and was taken up and kept indoors during the following winter, then planted out and never taken in again, and it flowered in the fourth year. The seedlings were never taken under glass, and they flowered in their third year. The plant stands just above a dwarf wall at the lower side of a slightly sloping border. There is no water near it. *J. Lister Codlee, Wakes Colne Place, Essex.*

LATE PEAS (see pp. 202, 225, 241).—We have been gathering Peas three times a week throughout October, and are still getting supplies. The principal variety to yield so satisfactorily is "Prior," a Pea, I think, not much known, and was so strongly recommended me by a local nurseryman that I gave it a trial. It was sown side by side with Alderman on July 17, and though the latter has always been a good late cropper here, Prior has proved much more prolific, whilst the flavour is all that can be desired. It has a strong constitution, and has shown scarcely any mildew. The rainfall here for the months of June, July and August was abnormally heavy, being slightly over 13 inches. *A. J. C., Duffryn, Cardiff.*

Land Cure for Unemployment.—I think it is very likely that Mr. Cornish (p. 298) has misread my letter on the above subject. The lowest price I gave for digging an acre of ground was £2, not £1. And I did not say that a man would have to dig an acre of ground in a week. No man could perform such a herculean task. In fairly genial soil a man could get through about 10 rods per day; but, of course, he would have to be one accustomed to spade work. I gather from Mr. Cornish's letter that the pay in Kent for digging an acre of land is £1. If so, it is no wonder that "the usual procedure is, "to dig a bit, miss a bit, black a bit." One could not expect anything better for the money, but such work is dear at £1 per acre, and certainly it is not digging. No doubt a vast number of the unemployed could not dig at all. I have seen large gangs of "all sorts," in which the great majority of the men got blisters on their hands in less than half an hour, and who could not dig 10 rods of ground in a month. And they were paid a minimum wage of 30s. per week out of the rates! Apart from these, however, there are plenty of men used to farm and garden work, who, if encouraged by better pay, would no doubt be able and willing to perform a fair day's work, and turn the soil up, not only more deeply than ordinary ploughing does, but also break its clods into much finer particles. For many years past I have been comparing the results obtained from ploughed land and land that has been dug, and there is no doubt whatever in my own mind that the latter produces heavier and cleaner crops, and consequently more remunerative ones. It is a pity that digging makes some people's backs ache, but I think there are other occupations that not only make the back ache, but the head and heart also. It would be a curious kind of occupation that did not make somebody tired after a few hours. *John Weathers, Isleworth.*

—— As to the advantages of digging land one foot deep in preference to ploughing it 6 inches deep, most people will agree. Mr. Weathers (p. 266) gives his highest price for ploughing at 25s., for digging 55s., a difference in cost for labour against digging of 30s. per acre. He states that a man should dig one acre in sixteen days; this means he has to turn over a piece of land about 17½ yards long and 17½ yards wide, 1 foot deep, each day. For this he is to receive a maximum pay of 3s. 5¼d. per day. Assuming each day to consist in nine hours, this means a little more than 4½d. per hour. I begin to wonder where the men, however willing they may be, are to be found capable of doing so much work for so little pay. Using a No. 2 spade, 7 inches wide and 1 foot deep, and turning over soil 6 inches wide each spade graft, means that there are more than 9,000 spadefuls to be turned over each day. *J. E.*

Winter Employment on Country Estates (see p. 240).—Reference to the following practice that used to be carried out at Bostock Hall, Cheshire, may be timely. It was Colonel France-Hayhurst's plan to have some trenching or planting, or both, done almost every winter on the estate by some able-bodied, unengaged men obtained usually from the nearest town, Middlewich. A piece of ground was chosen which, by judicious planting, was calculated to improve the appearance and views of the landscape in general. Sometimes the site would be a belt of land to be planted for screening, at others huge circular plantations would be made. The trees planted included early-flowering kinds such as Cherries, Conifers, and forest or timber trees, thereby ensuring present beauty and ultimate timber value. After planting everything was supported that needed so doing, and proper protection from animals was afforded by iron hurdling and wire netting. All working details were under the supervision of the head gardener, and it was during my stay there as foreman that I had opportunity for making these observations. *C. Turner, Highgate.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 3.—The fortnightly meeting took place as arranged on Tuesday last in the Society's Hall, Vincent Square, Westminster. Chrysanthemums were the principal feature of the exhibition, and the highest awards, including one Gold Medal, were made for these flowers. Begonias, Carnations, Ferns and Dahlias were also shown well.

The Floral Committee recommended five Awards of Merit to novelties.

The exhibits of Orchids were fewer than usual; the Orchid Committee awarded one First-class Certificate and four Awards of Merit to novelties and three Medals for collections.

The exhibits before the Fruit and Vegetable Committee included two collections of fruit, for which Medals were awarded, but no novelty was granted an Award.

At the three o'clock meeting in the Lecture Room an address on "Some Useful Books for an Amateur Gardener's Library" was delivered by Mr. E. A. Bowles, M.A.

Floral Committee.

Present: H. B. May, Esq., in the chair, Messrs. John Green, C. R. Fielder, G. Reuthe, J. W. Moorman, Wm. Howe, J. Jennings, T. Stevenson, W. J. Bean, Jas. Hudson, E. A. Bowles, R. Hooper-Pearson, J. F. McLeod, W. Bain, John Dickson, Chas. Dixon, H. J. Jones, Chas. E. Shea, W. Cuthbertson, Chas. E. Pearson, W. P. Thomson, E. H. Jenkins, F. W. Harvey and W. R. Cranfield.

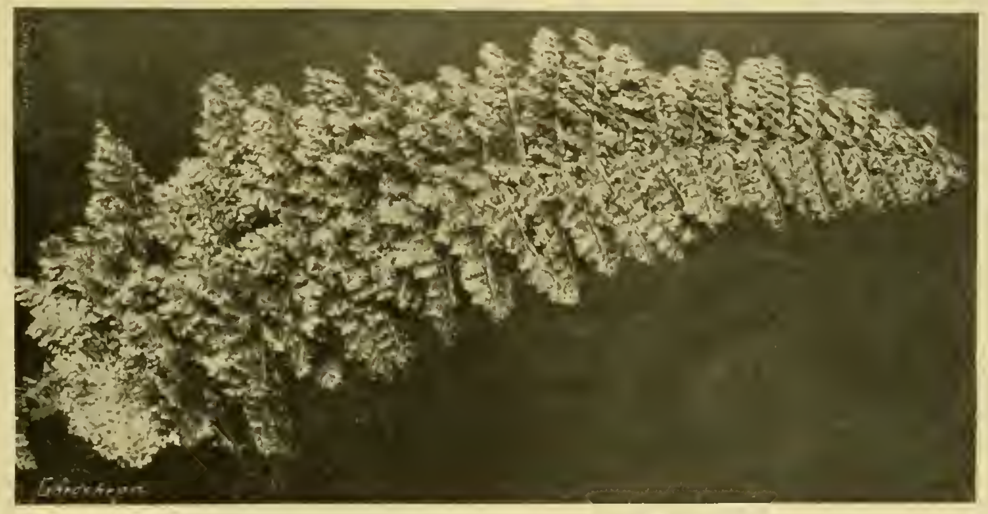


Fig. 123.—plumose variety of polystichum angulare.

(See Awards of Merit.)

AWARDS OF MERIT.

Lapageria alba delicata.—The flowers of this variety have a faint blush, which on close inspection is seen to be due to a slight mottling of rose colour. Shown by Elizabeth Lady Lawrence, Dorking (gr. Mr. Bain).

Polystichum angulare divisilobatum plumosum densum superbum (see fig. 123).—The name is ponderous, but the plant is beautiful, for the fronds are elegantly crested in the pinnae, making a dense plumose leaf, which in the young stage is a golden-green. Shown by Mr. Amos Perry.

Chrysanthemum Mrs. J. Gibson.—A large Japanese variety of pale lilac-mauve colour, the tinting showing in faint streaks on a white ground.

C. Captain Fox.—A Japanese variety suitable for exhibition, coloured rich crimson, with gold colour reverse.

La Negresse.—A fine crimson decorative variety showing bronze colour in the centre. These three exhibited by Messrs. W. Wells and Co.

GROUPS.

The finest exhibit in the Hall was a collection of Chrysanthemums shown by E. Mocatta, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson). This imposing group contained blooms of the highest merit and was arranged splendidly. Brilliantly coloured Codiaeums (Crotons) were used as foils with good effect, and Ferns were employed freely for greenery. The centre-piece was a batch of the white incurved variety H. W. Thorp, flanked on the one side by the fine crimson single Ceddie Mason and on the other by Cardinal, a duller crimson than its companion. At the back, separated from these by a fine specimen Codiaeum, was an epergne filled with blooms of Bob Pulling and Master James, both large Japanese varieties. In another vase were the fine white Japanese varieties William Turner and Mrs. G. Bai. There were also choice blooms of F. S. Vallis, Queen Mary, Miss Alice Finch (amaranth colour with silvery reverse), Mrs. R. A. Witty and Mrs. R. Luxford. Along the front were vases of such beautiful singles as Gracie Page, pink; Snowflake; Portia, bronzy-red; Celia, yellow; and Mensa, white. (Gold Medal.)

Mr. Norman Davis, Framfield, Sussex, filled a large table with Chrysanthemums, for which a Silver-gilt Flora Medal was awarded. The blooms were of splendid quality and attractively staged. He showed the beautiful crimson variety His Majesty in fine form, the blooms being of the large exhibition type. Dandy is a new Japanese variety of old rose colour, with amber reverse; Mrs. A. E. Roupe is a large bloom of deep yellow colour, suitable for exhibition; and others of this type are Mrs. H. J. Jones (greenish-yellow) and Amy Poulton (flesh pink). Three good singles were seen in Mensa (white), Glorious and Mrs. Loo Thomson, its counterparts in yellow and sulphur colour respectively.

Messrs. H. J. Jones, Ltd., Ryecroft Nurseries, Hither Green, showed Chrysanthemums finely. The large Japanese varieties were staged at the back in big epergnes, outstanding varieties being Bob Pulling, canary yellow; Mrs. E. Tickle, pink; Miss Bennett (new), crimson; Mrs. C. E. Edwards, incurved, white; J. Surrey, crimson; and Mrs. R. C. Pulling, greenish-yellow. (Silver-gilt Flora Medal.)

Messrs. W. Wells and Co., Ltd., Merstham, also showed Chrysanthemums. They had splendid blooms of their fine white Japanese variety Queen Mary; Thos. Beeson, an incurved Japanese bloom of bronzy-yellow colour; Undaunted, of the same type, coloured rosy amaranth; the beautiful crimson-coloured single Ceddie Mason; Ideality, a fine white single Chrysanthemum; and a small reflexed Japanese variety named Petite Jeanne, each floret having a depression in the tip, giving the bloom a distinct appearance. (Silver Banksian Medal.)

Messrs. J. Peed and Son, West Norwood, exhibited a large group of Chrysanthemums. The following sorts were noted:—His Majesty, Fred Hughes (a fine red single variety); Chas. Kingsley, yellow single; Emblème Poitevine and Buttercup, two of the best yellow incurveds; Master Rex, Evelyn Mason, white, and Ceddie Mason, crimson, both singles. (Silver Flora Medal.)

Messrs. H. B. May and Sons, The Nurseries, Upper Edmonton, filled a large table with greenhouse flowering and foliage plants. The flowers—Begonias, Hydrangea Mme. Mouillère, Statice profusa, and Cyclamens—were grouped with beautiful Ferns, the association of Statice profusa with Adiantum Farleyense gloriosum being especially pleasing. (Silver Banksian Medal.)

Messrs. H. Cannell and Sons, Eynsford, exhibited bunches of zonal-leaved Pelargoniums. The flowers made a bright group and a pleasing change from the Chrysanthemums. The finest varieties were Mme. Kovalesky, Queen of Italy, Frogmore, Crimson Paul Crampel and Snow storm.

Messrs. Rasmussen and Crone, Wanstead, were awarded a Silver Banksian Medal for a group of Begonias, mostly of the Gloire de Lorraine variety.

Mr. L. R. Russell, Richmond, was awarded a Silver Banksian Medal for a group of berried plants and ornamental-leaved shrubs.

Messrs. Stuart Low and Co., Enfield, showed Carnations of the perpetual-flowering type, including a promising seedling raised from May Day named Mrs. Mackay Edgar; the colour is pink. This firm also showed winter-flowering Begonias. The plants were excellent little specimens, and all were flowering profusely. Elatior and The Gem were the most floriferous varieties. (Silver Flora Medal.)

Messrs. W. Cutbush and Son, Highgate, showed Carnations, giving special prominence to their novelty, White Swan, which possesses the Clove scent in a marked degree. (Bronze Banksian Medal.)

Mr. C. Engelmann, Saffron Walden, exhibited the new Carnations Peerless, a cerise-coloured variety of American origin, and Matchless, white, in a general collection. (Silver Banksian Medal.)

Carnations were also exhibited by Messrs. Allwood Bros., Wivelsfield. Their novelty, Bishton Wonder, is exceptionally fragrant, but the colouring, lavender or lilac and rose, is not pleasing. (Bronze Flora Medal.)

The Misses Price and Fyfe, Birchgrove, East Grinstead, showed Carnations and Chrysanthemums.

Messrs. Dobbie and Co., Edinburgh, exhibited, as at the last meeting, a collection of Collerette Dahlias, flowers that lend themselves admirably for grouping. Doon, orange-red, with golden-yellow collar; Cloch, delicate lavender-coloured florets, lemon-yellow collar, and deep yellow centre; Prince of Orange, Balmoral, magenta and white, and Deveron, rosy-magenta, are a selection. (Silver Banksian Medal.)

Mr. Amos Perry, Enfield, again contributed a group of hardy Ferns, this time a collection of Polystichums, in about 100 species and varieties. Forms of P. aculeatum were exceedingly beautiful, as were also P. frondosa Lowii, P. grandiceps, P. angulare divilosum laxum, P. a. d. densum, P. a. d. plumosum, and P. frondosum. (Silver Banksian Medal.)

Messrs. J. Cheal and Sons, Crawley, exhibited sprays of trees and shrubs with autumn tints, Quercus palustris, Acer palmatum, and several Maples being exceedingly beautiful. Varieties of Pernettya, with differently coloured berries, Symphoricarpus vulgaris, with clusters of small red fruits, S. Heyeri, with bunches of tiny white berries, various Veronicas, and sprays of Ceanothus in bloom were also included.

Messrs. John Waterer, Sons, and Crisp, Ltd., Twyford, showed hardy flowers. Erigeron Quakeress, Eryngium Oliverianum superbum, Aster Perry's Pink, Iris stylosa and its deeper coloured variety marginata, I. alata and Convolvulus Cneorum are all good things. The last was shown as small pot plants, bearing pretty silvery-grey leaves and white flowers, with bands of rose colour, the buds being wholly rose-coloured.

Messrs. Barr and Sons, King Street, Covent Garden, exhibited numerous hybrid Nerines, Violets, Kniphofias, fruits of Iris foetidissima, early flowering bulbs, and fruits of Capsicum in variety. (Bronze Banksian Medal.)

Alpines and hardy flowers were exhibited by Mr. G. Reuthe, Keston, Kent (Bronze Flora Medal); Mr. Clarence Elliott, Stevenage; the Misses Hopkins, Shepperton; and Mr. W. Wells, junr., Merstham, Surrey.

Mr. J. J. Kettle, Corfe Mullen, Dorsetshire, was awarded a Bronze Banksian Medal for Violets.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. secretary), F. M. Ogilvie, T. Armstrong, W. Cobb, J. Charlesworth, J. Cypher, J. E. Shill, S. W. Flory, W. P. Bound, H. G. Alexander, A. Dye, W. H. White, E. H. Davidson, W. Bolton, Gurney Wilson, De B. Crawshay, Sir Harry J. Veitch and Sir Jeremiah Colman, Bart.

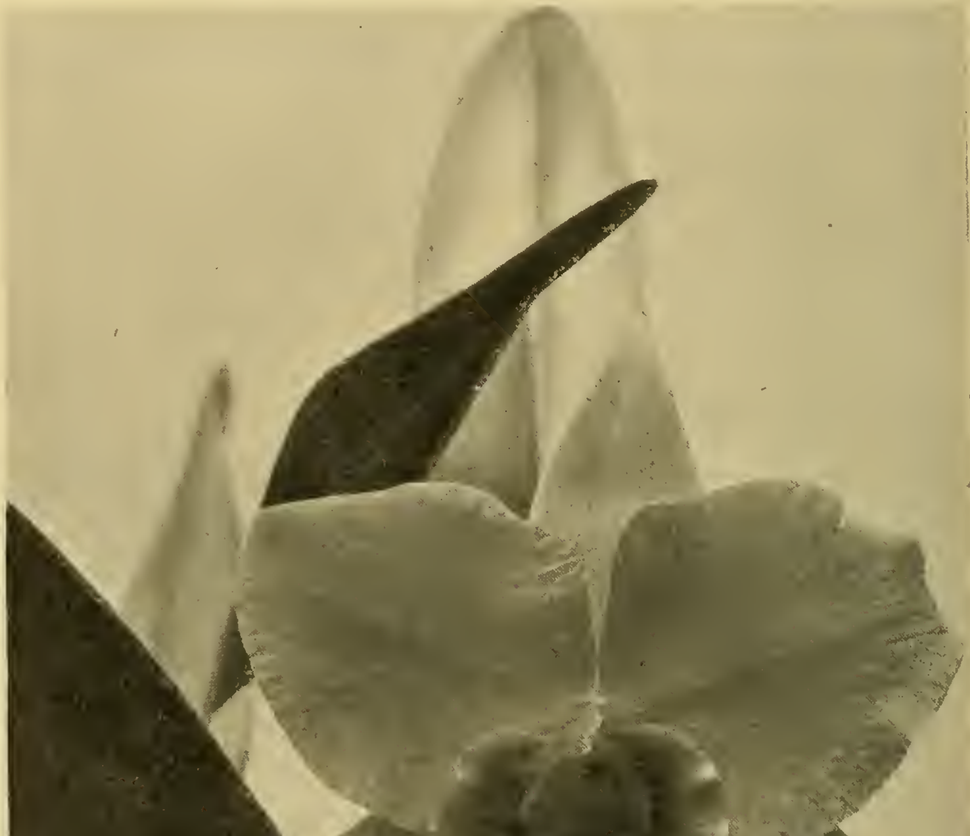


Fig. 124.—Sophro-Laelia Felicia Fowler's variety.

AWARDS.

First-class Certificate.

Sophro-Laelia Felicia Fowler's variety (*S.-L. heatonensis* × *Laelia pumila*) (see fig. 124), from J. Gurney Fowler, Esq., Brackenhurst, Pembury, Tunbridge Wells (gr. Mr. J. Davis). This variety is a triumph for the hybridist, the large size of the flower on a plant of small growth being remarkable, and the colour of the richest shades in Sophro-Laelias. The original form, which received an Award of Merit on March 3, 1908, had the tubular-lipped, narrower L. pumila praestans as one of the parents. The present form had the typical broad-petalled L. pumila with its fine, openly-expanded lip, and hence the gratifying result. The perfectly-shaped flower was of an intensely rich ruby-purple shade, varying in tint, the outer part of the petals being the lighter. Throughout the whole flower an underlying tint of orange-scarlet, inherited from Sophronitis grandiflora, gives a glowing appearance to the surface.

Award of Merit.

Cattleya Astron (*Harrisoniana alba* × *Dusseldorfei Undine*), from Baron Bruno Schroder, The Dell, Englefield Green (gr. Mr. J. E. Shill). A good flower of fine substance and clear white colour. It was voted an Award on July 28, but material for the picture not being given, it was withdrawn. The Award was now revived.

Laelio-Cattleya Neleus var. Sunspot (*C. Iris* × *L.-C. Ophir*), from F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth). The shades of yellow in Laelio-Cattleyas brought about by hybridisation are various and not easily described. The plant shown had a three-flowered inflorescence, the sepals and petals of which were bright chrome-yellow with a slight emerald-green shade. The lip, which in the constriction of the middle part showed the influence of C. Iris, was reddish-crimson, with fine gold lines from the base.

Cypripedium Nirvana (parentage unrecorded), from W. R. Lee, Esq., Plumpton Hall, Heywood (gr. Mr. Branch). A good addition to the C. aureum hybrids, the flower being large and of perfect shape. The petals and lip were pale Apple green, with some purplish markings; the fine dorsal sepal snow-white, with a small green base and some dark purple spotting.

Odontoglossum Irene (*Uro-Skinneri* × *Thompsonianum*), from Messrs. Charlesworth and Co., Haywards Heath. Odontoglossum Uro-Skinneri crosses are always pretty and distinct and generally freer to flower than the parent. O. Irene is the best, the flowers being of good shape, dark reddish-claret colour, with wavy white lines across the segments, the crest being dark yellow.

GENERAL EXHIBITS.

Messrs. Charlesworth and Co., Haywards Heath, were awarded a Silver Flora Medal for a group of specially good things, among which were noted a fine form of Laelio-Cattleya Neleus and other yellow-petalled hybrids, including forms of Cattleya Thyone. C. Hybla (Iris × Trianae) appeared in quite a new form, the richly-coloured flowers being shaped like the best type of C. Trianae; C. Portia had flowers equal in size to C. labiata and C. Antiope; various other Cattleyas were of good quality. Odontioda Brewii had large deep red flowers; O. Wilsonii very pretty rose-blotched blooms; and a selection of Odontoglossums were included.

Messrs. Sander and Sons, St. Albans, staged a good group of Cattleyas, Laelio-Cattleyas, and Odontoglossums. Varieties of Cattleya Fabia, C. Black Prince, C. Hardyana picturata, C. Acis, C. Mantinii, C. Brownii, and others were shown, together with a good selection of Cypripediums; Shogun, Corsair, and Germaine Opoix being the best. Coelogyne Mooreana, Brassia Lawrenceana longissima, Saccolabium acutifolium and other rare species were also noted. (Silver Flora Medal.)

Messrs. Stuart Low and Co., Jarvis Brook, Sussex, arranged an effective group in which the prominent features were good Vanda coerulea, Cattleya Peetersii, C. Fabia and variety alba, some Laelio-Cattleyas, including a good L.-C. eximia with a spike of six flowers; some Dendrobiums, a white form of D. Phalaenopsis Schröderianum with pale mauve markings on the lip being very distinct and novel in colour. (Silver Banksian Medal.)

Mr. E. V. Low, Valebridge, Haywards Heath, showed a selection of good white-petalled forms of Cattleya labiata, and including the varieties R. I. Measures, W. R. Lee, La Vierge, Mrs. E. Ashworth, Daphne and Pride of Southgate.

Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells, showed their new Brasso-Cattleya Admiral Jellicoe C. Lord Rothschild × B.-C. Digbyano-Mossiae). A model flower of fine size, the ground colour was cream-white on which was a tinge and veining of bright rose, the front of the lip being rosy-lilac; B.-C. Mrs. J. Leemann Orchidhurst variety, a large primrose-yellow flower, marked with rose; and the pretty Cattleya Hector (L.-C. Martinetii × C. aurea).

E. Whiteaway, Esq., Feltham Lodge, Feltham (gr. Mr. J. Tait), sent a flower of Brasso-Cattleya Gladius (C. bicolor × B.-C. Digbyano-purpurata), an interesting cross.

W. R. Lee, Esq., Plumpton Hall, Heywood (gr. Mr. Branch), sent Odontioda Schröderiana Lee's variety (Oda. Bradshawiae × Odm. crispum), a very fine red hybrid, the flowers being nearly as large as O. crispum, cinnabar-red with pale lilac margin and tips to the segments.

Messrs. Flory and Black, Orchid Nursery, Slough, showed a good form of Anguloa Cliftonii pale lemon-yellow in colour, marked with purple on the inner segments.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq., in the chair, Messrs. Jos. Cheal, Edwin Beckett, A. R. Allan, H. Markham, Horace J. Wright, Edward A. Bunyard, Owen Thomas, W. Poupart, A. Bullock, A. Grubb, W. E. Humphreys, and A. W. Metcalfe.

Sir Montague Turner, Bedfords, Havering, Romford, exhibited a collection of fruits. There were Grapes, Plums, Figs, Apples, and Pears. The Apples and Pears were the best fruits; twelve Pitmaston Duchess Pears weighed 15 lbs. 9½ oz.

Messrs. W. Seabrook and Son, Chelmsford, exhibited about 40 dishes of Apples and Pears, for which a Silver Knightian Medal was awarded. The fruits were not exceptionally large, but they were of good quality. Of Apples, there were fine fruits of Gascoyne's Scarlet Seedling, The Queen, Bismarck, Fearn's Pippin, Allington Pippin, Warner's King, Beauty of Kent, Emperor Alexander, and Bowhill Pippin. The Pears included choice fruits of Emile d'Heyst.

Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. E. Beckett), showed fruits of a species of Cydonia from China, collected by Mr. E. H. Wilson. They resemble green Quinces, and we are informed that they are preceded by beautiful, salmon-coloured flowers.

From the Society's gardens at Wisley were exhibited four varieties of Quinces, viz., Portugal, a somewhat irregular shaped variety; Champion, smoother in outline and pyriform in shape; Borgen, with bright yellow skin; and Pear-shaped.

NATIONAL CHRYSANTHEMUM.

October 26.—A meeting of the Floral Committee was held on this date, when the following Awards were made to novelties:—

First-class Certificates.

Undaunted and *Mrs. Keith Luxford*, from Messrs. W. Wells, Ltd. These varieties were submitted for award at the previous committee meeting, but at this later date they were in better condition.

Exmouth Yellow. — A deep-yellow, single variety of much promise, shown by Messrs. Godfrey and Son.

The following varieties were recommended:—Rosie Walker, a golden-bronze coloured single variety for light decorative work, from Messrs. W. Wells, Ltd.; Miss A. Goodbourn, a purple-crimson single variety which the committee in 1913 desired to see again. The committee desired to see the following varieties on another occasion: — The Badger, a good crimson Japanese bloom from Messrs. W. Wells, Ltd.; Master A. Ewen, a bronze-coloured single from Mr. Newton; and Exmouth White, a large pure white single, from Messrs. Godfrey and Son.

CROYDON CHRYSANTHEMUM.

October 28, 29.—The show held at the Baths Hall, Scarbrook Road, Croydon, on these dates, under the auspices of the Borough of Croydon Chrysanthemum Society, was unique among the twenty-seven exhibitions to the credit of this society. The annual competitive show was abandoned, and a non-competitive exhibition in aid of the Mayor of Croydon's Fund for War Charities held in its stead. The result was satisfactory from all points of view. Local growers gave the show splendid support, and there were several fine groups by traders. No prize money was awarded. The exhibits were judged and graded according to merit.

One of the most showy groups was staged by Mr. F. J. Larcombe, Jun., Coombe Lane Nursery, Croydon. This comprised well-grown, sturdy, bush plants, finely arranged on a raised platform. Messrs. W. Wells and Co., Merstham, exhibited their new varieties, Undaunted and Mrs. K. Luxford, a new crimson variety of the decorative type named Badger, Daily Mail, Portia, Bronze Pagram, Edith Pagram, Heston Bronze, Cranfordia and Petite Jeanne, a pure white variety introduced from France.

E. Lazenby, Esq., Beckenham (gr. Mr. G. Fisher), contributed in the class for 15 cut blooms of Japanese varieties. His best flowers were Mrs. Gilbert Drabble and Lady Talbot. Another noteworthy exhibitor in this class was A. Gosheron, Esq. (gr. Mr. R. Gladwell), Tennison Road, South Norwood, his most prominent variety being Mrs. G. Drabble. Mr. G. Edwards, a veteran Shirley grower, staged excellent blooms, the pick of which were Mrs. G. Drabble, Frances Jolliffe, Bob Pulling, and Lady Talbot.

C. H. Wells, Esq. (gr. Mr. A. G. Osmond), South Norwood, had a choice exhibit of three "fives," the varieties being King George, Bob Pulling and Mrs. C. H. Totty.

Mr. G. Fisher was also a prominent exhibitor in the class for 10 Japanese blooms, staging admirable blooms of Reginald Vallis, Mrs. R. Luxford and King George. An exhibit by Mrs. Thrale, Coombe Road, Croydon (gr. Mr. A. J. Hart), showed well-finished blooms of Master James, Mrs. R. Luxford, Mrs. G. Mileham and Mrs. G. Kelly. Mr. Osmond was again to the fore in the class for 10 blooms, showing especially good blooms of Mrs. G. Mileham, Mrs. F. C. Stoop, F. S. Vallis, Mrs. G. Kelly, Mrs. W. Knox, Lady Talbot and White Queen.

The class for 25 Japanese blooms was an attractive one. Many of the flowers staged by J. A. Allen, Esq., Wynnston, Limpsfield (gr. Mr. Wm. Fleet), were of exceptional merit, and the following are worthy of special mention:—Pockett's Crimson, Frances Jolliffe, Melchet Beauty, White Queen, Rose Pockett, Miss Lilian Hall, Mrs. L. Thorn and Mrs. A. T. Miller.

A noteworthy collection of Chrysanthemums from the open was exhibited by Miss A. Epps, Upper Norwood (gr. Mr. J. Carpenter). The varieties shown included Normandie, Almirante, Coral Queen, Cecil Wells and the old white Quintus. Mr. F. Oxtoby and H. Hales, Esq., Elmwood, Kenley (gr. Mr. F. Hainge), also exhibited in this class.

F. Lloyd, Esq., Coombe House, Croydon (gr. Mr. E. Miles) contributed well-grown singles and a large group of miscellaneous flowers and plants. Japanese blooms were shown by J. B. Vaughan, Esq., Croydon (gr. Mr. L. Godby), and an attractive group was arranged by G. J. Allen, Esq., Coombe Cliffe, Croydon (gr. Mr. B. Nash).

The challenge cups offered for the best exhibits in the various sections were awarded to Messrs. Frank Oldham, M. E. Mills, and G. Fisher respectively.

HORNSEY CHRYSANTHEMUM.

October 28 and 29.—The 25th annual exhibition of the Hornsey and District Chrysanthemum Society was held in the local Drill Hall. The show was opened by the President, Lord Ronaldshay, who is Member for the district. The schedule included some forty classes, and these attracted about 120 entries, the figures being slightly lower than usual. The National Chrysanthemum Society awarded two certificates, one for a group of about 200 plants, staged by Mr. H. C. Green, Hornsey, the other for eight white and eight yellow Japanese blooms, arranged in vases, exhibited by Mr. E. P. Cooper, of Colney Hatch Lane. Mr. Green was very successful, and won 1st prizes in the classes for (1) a group of

Chrysanthemums arranged with foliage plants, (2) a bouquet of Chrysanthemums, (3) best specimen plant of a single variety, (4) a vase of five Japanese incurved varieties, and (5) three plants of Chrysanthemums. Mr. J. Riches was placed 2nd for a group of Chrysanthemums, and he won the 1st prizes in the classes for (1) two vases of Japanese blooms, (2) six plants of Chrysanthemums, and (3) a basket of Chrysanthemums. Other prominent prize-winners in the floral classes were Messrs. S. Smith, T. R. Spring, T. Marriott, and J. A. Howe. Mr. A. C. Green exhibited the best collection of fruit.

MAIDENHEAD CHRYSANTHEMUM.

OCTOBER 29.—The annual exhibition of the Maidenhead Chrysanthemum Society was held in the local Drill Hall. The show proved very successful, and the profits were allotted to the Belgian Relief Fund, the exhibitors having consented to forgo their prize money. In addition, flowers and fruits were sold in aid of the same fund. The first prize for forty-eight Japanese blooms, distinct, was won by Mrs. SLATTERY, Marlow (gr. Mr. R. Evans). As this exhibitor has won the first prize in this class for three years in succession, the Cup presented by Mrs. Fortescue, of Dropmore, the trophy becomes her property. A specimen of Bob Pulling was adjudged the best bloom in the show, and it received a Certificate. Other varieties shown well were Lady Talbot, Queen Mary, Mrs. Gilbert Drabble, and Master James. The second prize was won by Mrs. LITCHE, Maidenhead (gr. Mr. Hulbert)—the silver medal of the National Chrysanthemum Society was also awarded to this exhibitor; 3rd. Miss LANGWORTHY, Holyport (gr. Mr. Broom), who won outright the Cup offered by the late Duchess of SUTHERLAND for a group of decorative Chrysanthemums. The most successful exhibitor of Carnations and Fruit was HORNBY LEWIS, Esq., Marlowe (gr. Mr. Hillier).

PEOPLE'S PALACE AND EAST LONDON HORTICULTURAL.

OCTOBER 29-31.—The Annual Chrysanthemum Exhibition of the People's Palace and East London Horticultural Society was held on these dates. The exhibits were fewer than last year. The silver vase offered by the Hon. HARRY LAWSON, M.P., was won by Mr. H. MITCHELL. H.M. the KING, Lord DESBOROUGH, and others contributed gifts of fruits and flowers, and these were sold for the benefit of the London Hospital. Messrs. CUMMINGS, MITCHELL, J. TYLER, C. B. CLARK, C. GORBELL, J. W. STEPNEY, and H. V. BENWELL were successful competitors.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 15.—*Committee present:* Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. Bamber, H. Bell, J. J. Bolton, J. C. Cowan, J. Cypher, J. Evans, J. Howes, A. J. Keeling, J. Lupton, D. McLeod, C. Parker, W. Shackleton, Z. A. Ward, G. Weatherby, and H. Arthur (secretary).

R. ASHWORTH, Esq., Newchurch (gr. Mr. Gilden), was awarded a Silver-gilt Medal for a group, which included Cattleya labiata var. Pandora, C. labiata Ashlands variety, Laelio-Cattleya Haroldiana, Sophro-Cattleya Marathon var. Dulce, Cypripedium Thisbe, C. insigne Sanderae and Odontioda Minos.

Z. A. WARD, Esq., Northenden (gr. Mr. Weatherby, was awarded a large Silver Medal for a group containing choice Cypripediums, Cattleyas, and other Orchids.

W. R. LEE, Esq., Heywood (gr. Mr. Branch), was awarded a large Silver Medal for a meritorious group chiefly consisting of Cypripediums.

Colonel J. RUTHERFORD, M.P., Blackburn (gr. Mr. Lupton), was awarded a large Silver-gilt medal for a group of Cattleya labiata in variety and other Orchids.

WM. THOMPSON, Esq., Walton Grange (gr. Mr. Howes), showed a well-arranged group chiefly consisting of Cattleyas and Cypripediums, to which was awarded a Silver Medal.

Messrs. J. CYPHER AND SONS, Cheltenham, were awarded a Silver Medal for a group, while Messrs. A. J. KEELING AND SONS, Messrs. SANDER AND SONS, Mr. J. EVANS and Mr. J. BIRCHENHALL showed interesting exhibits.

FIRST-CLASS CERTIFICATE.

Odontonia Chollettii (*Miltonia vexillaria* × *Odontoglossum Harryonum*), the flower segments are suffused with pink. Shown by W. R. LEE, Esq.

AWARDS OF MERIT.

Cattleya labiata var. Pandora, C. l. Ashlands var., Odontoglossum Minos, and *Cypripedium Thisbe*, all from R. ASHWORTH, Esq.

Cattleya fabia alba var. Lady Jellicoe, C. Iris var. Sir John Jellicoe, and Laelio-Cattleya St. Gothard West Point var., all from S GRATRIX, Esq.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 12.—The monthly meeting of the above Society was held in the R.H.S. Hall on Monday, the 12th inst., Mr. Charles H. Curtis presiding. One new member was elected. Two members were allowed to withdraw double the amount of interest owing to them, amounting to £5 2s. 4d.; and two members, having reached the age of 70 years, withdrew from their deposit sums of £24 4s. 5d. and £53 8s. 2d. respectively, still leaving £10 to their credit. The sum of £20 5s. 5d. was passed for payment to the nominee of a deceased member; and one member was allowed 5s. per week for life from the Distress Fund. The quarterly payments to chronic sick amounted to £20 3s. The sick pay for the month on the ordinary side amounted to £50 14s. 8d., and on the State side £27 6s. 8d., whilst maternity benefits totalled £7 10s.

DEBATING SOCIETIES.

BIRMINGHAM AND MIDLAND COUNTIES GARDENERS'.—The opening of the autumn session took place on Monday, the 5th ult., when a lecture on "The Border Carnation: its History and Cultivation" was read by Mr. A. R. Brown, of King's Norton. The Carnation, said the lecturer, was described by Theophrastus. It was he who endowed the plant with its generic name Dianthus (*i.e.*, divine flower) and for a long time it was cultivated only in its relation to medicine and cookery. Pliny stated that the Romans used it for soppes in wine and ale, as it imparted therein a spicy flavour. To Chaucer, in the reign of Edward III., could be traced the first mention of its cultivation in England. The word Picotee is derived from the French "Picote," meaning spotted—a mere misnomer at the present day, for the chief point in the Picotee at present is its purity, spots or bars being grave defects. At one time the split calyxed "Bursters" were alone preserved for cultivation; "Whole Blowers" not being deemed worthy of serious attention until 1740, when they ousted the coarser varieties. At this time, too, serrated petals came to be regarded as a serious blemish, and accordingly were eliminated. More than sixty years ago the present standard of excellence for Carnations was arrived at. Towards the nineteenth century Bizarres, Flaked, and White Ground Picotees became the valued varieties, Selfs then being regarded as wasters; but in the thirty-five years which have elapsed since that time the once despised "Selfs" have become the popular type. Mr. Brown next proceeded to give a few cultural notes, detailing his own procedure through all the numerous stages, from the time of propagation to the flowering of the plant. He also dealt with lists of the best of present-day varieties, gave some useful suggestions for the benefit of intending exhibitors, and ended his discourse with some further remarks on border Carnations. The secretary, Mr. Deedman, announced that a box had been requisitioned for fortnightly voluntary contributions of the members for the benefit of the Prince of Wales's Fund. A member, Mr. Farmer, as an initial donation gave £1, and this, together with the first evening's contributions, made a total of £1 10s. 6d.

KILMARNOCK AND DISTRICT GARDENERS'.—The opening meeting of the winter session was held on the 14th ult., Mr. R. K. Sillars presiding over a good attendance. Dr. Clark, rector of Kilmarnock Academy, delivered a lecture on "The Principles Underlying the Pruning of Fruit Trees." The close relationship existing between the roots and the growth of the shoots was illustrated with the aid of diagrammatic sketches. Much-divided roots, said the lecturer, can take up more potash and phosphates in proportion to nitrogen, so root pruning by increasing the number of fibrous roots causes a marked difference in the relative absorption of these three substances. The formation of a fruiting spur from a lateral shoot not required for extension purposes was fully explained, and the view was expressed that the dropping of Peach buds was connected with the potash supply.

MARKETS.

COVENT GARDEN, November 4.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of, the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—EDS.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz. ..	3 0- 3 6
Bouvardia, pink, per doz. bun...	4 0- 6 0
— white	4 0- 5 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties ..	1 0- 1 6
— smaller, per doz. bunches..	9 0 10 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz. ..	2 0- 2 6
— yellow per doz.	1 9- 2 0
— pink ,,	1 9- 2 0
— bronze ,,	2 0- 2 6
— white, medium per doz. ..	1 0- 1 6
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun...	4 0- 5 0
— — yellow, per doz. bun. ..	2 6- 4 0
— — pink, per doz. bun. ..	3 0- 4 0
— — bronze, per doz. bun. ..	3 0- 4 0
— singles, disbudded, per doz. blooms ..	1 3- 2 0
— — sprays, per doz. bunches ..	12 0-18 0
Eucharis, per doz.	1 6- 2 0
Gardenias, per box of 15 and 18 blooms.. ..	1 3- 2 0
Lapageria alba, per doz. blooms ..	2 0- 2 6
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long	2 3- 2 6
— — short ..	2 0- 2 6
Lilium lancifolium album, long ..	1 3- 1 6
— — — short ..	1 3- 2 0
— — rubrum, per doz., long ..	1 3- 1 6
— — — short ..	1 0 —

	s.d. s.d.
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	1 0- 1 3
Michaelmas Daisies, per doz. bunches ..	2 0- 3 0
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium ..	1 6- 2 0
— Harrisonii, per doz. blooms ..	4 0- 5 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches ..	5 0- 6 0
Roses: per dozen blooms, Bride	1 6- 2 0
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	1 0- 1 3
— Liberty ..	1 6- 2 0
— Madame A. Chatenay ..	1 3- 2 0
— Melody ..	1 3- 1 6
— My Maryland..	1 3- 1 6
— Niphetos ..	1 3- 1 6
— Prince de Bulgarie	1 0- 1 6
— Richmond ..	1 6- 2 6
— Sunburst ..	1 3- 2 0
— Sunrise ..	1 0- 1 6
— White Crawford	1 6- 2 0
Statice, Mauve, per doz. bunches ..	3 6- 4 0
— white, per doz. bunches ..	4 0 —6
Stephanotis, per 72 pips	2 0- 2 0
Tuberoses, on stems, per doz ..	0 5- 0 6
— short, per doz.	0 3- 0 4
Violets, English, per doz. bunches ..	1 0- 1 6
— Princess of Wales, doz. bun.	2 0- 3 6
White Heather, per doz. bunches..	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	3 0- 4 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Autumn foliage, various, per doz. bunches ..	6 0-10 0
Carnation foliage, doz. bunches ..	3 0- 5 0

	s. d. s. d.
Croton foliage, doz. bunches ..	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Honesty, per doz. bun.	10 0-12 0
Lichen Moss, per doz. boxes ..	9 0-10 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches ..	8 0- 9 0

REMARKS.—There is a glut of Chrysanthemums on the market, but a fair price is realised for best white blooms and bunches of white varieties. Inferior blooms can only be sold at a very low price. This also applies to Carnations, the supplies of which are further increased. Liliums show an advance in price. There is a scarcity of good Violets, which are selling more freely. The demand for Roses, especially of the varieties Liberty, Richmond and white varieties, has increased. Good Richardias (Arum Lilies) find a ready market, and there is a steady demand for white Camellias, which are more plentiful. A small consignment of yellow and white Narcissi and Anemone fulgens arrived in excellent condition this week from Scilly. Ericas and Chrysanthemums are too plentiful. Of the large varieties of Chrysanthemums available the white ones receive the most attention, but the coloured ones are selling a little better than they did last week. There is no demand for

Solanum, nor is there for Begonia Gloire de Lorraine, of which there are a few good plants. Well-flowered plants of Cyclamen are to be seen. Business is still very slack; in the Fern and Palm departments it is moderate.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0	Ferns in 48's, per dozen	5 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0	— choicer sorts, per dozen ..	8 0-12 0
Asparagus plumosus nanus, per dozen ..	10 0-12 0	— in 32's, per doz.	10 0-18 0
— Sprengeri ..	6 0- 8 0	Ficus repens, 48's, per doz. ..	4 6- 5 0
Aspidistra, per doz., green	18 0-30 0	— — 60's, per doz.	3 0- 3 6
— variegated ..	30 0-60 0	Geonoma gracilis 60's per dozen..	6 0- 8 0
Begonia Gloire de Lorraine, 48's, per dozen ..	10 0-12 0	— larger, each ..	2 6- 7 6
Cacti, various, per tray of 15's ..	4 0 —	Kentia Belmoreana, per dozen	5 0- 8 0
tray of 12's ..	5 0 —	Kentia Forsteriana, 60's, per dozen	4 0- 8 0
Chrysanthemum, 48's, per dozen	6 0-12 0	— — larger, per doz.	18 0-36 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0	Latania borbonica, per dozen ..	12 0-30 0
— — 60's, per doz.	8 0-12 0	Lilium lancifolium album, pr. doz.	18 0-24 0
Croton, per dozen	18 0-30 6	— — ruorum, per doz. ..	15 0-21 0
Cyclamen, 48's, per doz.	10 0-12 6	—longiflorum, per dozen	15 0-18 0
Dracaena, green, per dozen .	10 0-12 0	Lily-of-the-Valley	—
Erica nivalis, 48's, per dozen ..	10 0-12 0	— 48's, per dozen	21 0-30 0
— — thumbs, per doz. ..	3 0- 5 0	Marguerites, in 48's, per doz., white	—
— gracilis, thumbs, per doz. ..	3 0- 5 0	Pandanus Veitchii, per dozen ..	36 0-48 0
— — 48's, per doz.	8 0- 9 0	Phoenix rupicola, each	2 6-21 0
Ferns, in thumbs, per 100.. ..	8 0-12 0	Solanums, 48's, per dozen	8 0- 9 0
— in small and large 60's ..	12 0-20 0	Spiraea, white, 32's per dozen ..	6 0- 8 0

Remarks.—Business is a little more brisk, but Ericas and Chrysanthemums are still too plentiful. Other noticeable plants are Cyclamens, Solanums, Marguerites, Begonias, Bouvardias, and Lilies-of-the-Valley. Amongst foliage plants Aspidistras are in most demand. The Palm trade is very slow.

Vegetables: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Beans, French, per lb.	0 8 0 10	Mushrooms, cultivated, per lb...	0 10- 1 0
Beetroot, per bushel . ..	3 0- 4 6	— Buttons ..	0 10- 1 0
Brussels Sprouts, per ½ bus. ..	2 0- 3 0	— Field	0 2- 0 3
Cabbages, per tally	5 0- 6 0	Mustard and Cress, per dozen punnets	0 10- 1 0
Carrots, per cwt. ..	3 6- 4 0	Onions, per cwt. ..	8 6 —
Cauliflowers, per tally	5 0- 7 6	Parsley, per dozen bunches ..	1 0- 2 0
Celery, per doz. bun.	9 0-12 0	Parsnips, per cwt.	4 0- 4 6
Cucumbers, per flat	7 0- 7 6	Sage, per dozen ..	2 0- 4 0
Eschallots, per cwt.	7 0 —	Spinach, per bus...	2 0- 2 6
Garlic, per lb. ..	0 7- 0 8	Tomatos, English, per doz. lbs. ..	3 6- 4 0
Horseradish, English, per bundle	2 6- 5 0	— seconds ..	2 0- 3 0
Leeks, per dozen ..	1 6- —	Thyme, per dozen bunches ..	2 0- 6 0
Lettuce, per doz. ..	1 0- 1 6	Turnip, English, per cwt.	3 0- 3 6
Mint, per doz. ..	2 0- 4 0	Watercress, per doz.	0 4- 0 6

Remarks.—The market is still well supplied with vegetables of all kinds, but trade during the past week has been slow.—*E. H. R., Covent Garden, November 4, 1914.*

Fruit: Average Wholesale Prices.

Apples—	s.d. sd.	Grapes (*contd*)—	s.d. s.d.
— Californian Newtown Pippins, per box	6 0- 7 6	— Muscat of Alexandria ..	1 0- 3 6
— English dessert, per ½ bushel ..	2 6- 4 6	— Canon Hall, per lb.	1 0- 5 0
— cooking, 1 bush.	2 6- 4 6	Medlars, per ½ sieve	3 0- 4 0
— Nova Scotia, per brl. ..	8 0-15 0	Melons	0 9- 3 0
Bananas, bunch:		Nuts, Brazils, p. cwt.	60 0 —
— Medium ..	5 0 —	— Chestnuts, Redon, per bag ..	10 0-15 0
— X-medium ..	6 0 —	— Walnuts (English), per doz. lb. Doubles ..	6 0- 8 0
— Extra ..	7 0 —	— — Singles ..	0 3- 0 5
— Double X ..	8 6 —	— — French, per bag	7 0- 9 0
— Giant	9 0-10 0	Pears, American, per barrel ..	14 0-21 0
— Red, per ton ..	£20 —	— Californian, per case ..	9 0-12 0
— Jamaica, p. ton	£15 —	— English, ½ sieve	3 6- 6 0
Cobnuts, per lb. ..	0 4 —	— stewing, per bushel.. ..	3 0- 5 0
Cranberries, per case	8 6-11 0	Prunes, per ¼ bus.	3 6- 4 6
Grapes: Alicante, per lb.	0 6- 1 3	Quinces, per ½ sieve	3 0- 3 6
— Almeria ..	8 0-24 0	Sloes, per doz. lbs.	1 6- 2 0
— English, Gros Colmar, per lb.	0 8- 1 9		
— Gros Maroc, per lb. ..	0 9- 1 0		

Remarks.—The following varieties of home-grown Apples are on sale:—Cox's Orange Pippin, Worcester Pearmain, Charles Ross, Newton Wonder, Blenheim Pippin, Bramley's Seedling and Dumelow's Seedling (Wellington). Large quantities of Apples packed in barrels are arriving from Nova Scotia, and both Apples and Pears are coming from the United States of America. The supply of English Pears is lessening; the bulk consists of the variety Doyenné du Comice. Pears from abroad consist of the following varieties:—Doyenné du Comice, Keiffer, Duchess, and Winter Nelis. Grapes are not very plentiful, but the supply is equal to the demand, and Almeria Grapes packed in boxes with cork dust, each case weighing about 36lbs., are plentiful. Melons are still available. English and French Walnuts, also Chestnuts, are still plentiful, and Cobnuts are now in excellent condition and reasonable in price. The supply of English Tomatos is decreasing, but the consignments of these fruits from Teneriffe are increasing. Mushrooms from out-of-doors are again plentiful, whilst those grown under cultivation are sufficient for the demands. Cucumbers are not so plentiful as they have been, and Onions are dearer. From France are arriving Salads, Asparagus, Pears, Walnuts, and Chestnuts.—*E. H. R., Covent Garden, November 4, 1914.*

New Potatos.

	s. d. s.d.		s. d. s.d.
Bedford	3 0- 3 6	Lincoln	3 0- 4 0
Blackland	2 9- 3 0	Kent	3 3- 4 0
Dunbars, per cwt.	4 6 —	Essex	3 0- 3 3

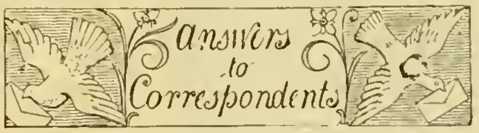
Remarks.—Trade remains about the same as last week; supplies are plentiful and stocks are heavier. The mild weather is very much against a brisk trade.—*Edward J. Newborn, Covent Garden and St. Pancras, November 4, 1914.*

Obituary.

William Miller.—We regret to announce the death, at the advanced age of 85 years, of Mr. William Miller, a well-known amateur gardener, who died at his residence at Kyle Street, Ayr, on the 24th ult. He was a successful exhibitor at local and other shows.

REPLY.

Boyd's Soil Fumigant.—In reply to *An Old Reader* re "Boyd's Sunray Fumigant" (p. 302), the agents are Messrs. G. and W. Yates, Seedsmen, Old Market Place, Manchester. I have used half a ton of this fumigant on our land for Brassicas with other fumigants for worms, fungous diseases, including clubbing. It proved a great success. I consider it one of the best soil fumigants on the market. *J. E. Lidster, West Riding Asylum, Wakefield.*



Answers to Correspondents

A Group of Plants for Competitive Exhibition: *Exhibitor.* We do not think that any opinion we may give you in answer to the question respecting the comparative value of groups from the competitive point of view will afford you a definite guide, because so much depends upon the tastes of the judges who officiate. One judge with particular appreciation for Chrysanthemums might very likely place a group of first-rate Chrysanthemum plants—"extra fine," as you describe them—before a miscellaneous group of stove plants. But another with a keen admiration for house plants would be just as likely to consider that the house plants were greatly superior to the Chrysanthemums and represented more skilful culture. If you are competing in the class for a group of Chrysanthemums we advise you to do your very best in that class to win the 1st prize, and the better you win that prize the greater chance will you stand of winning the cup that is to be awarded for the best group in the whole of the classes regardless of its composition.

Apples as Espaliers: *A. M. Swain.* James Grieve, an early dessert variety, and either Bramley's Seedling, a strong growing variety, or Lane's Prince Albert would be suitable for your purpose.

Begonia with Yellow Foliage: *E. S.* The cause of the injury is eelworms. See reply to *C. M.* Usually when eelworms attack plants the best plan is to destroy diseased specimens by burning, and to remove the soil which is the source of contagion. The pest is not an easy one to deal with, and unless the plants are very valuable it is better not to attempt to save them, for other plants in the house may be attacked.

Begonias Unhealthy: *W. N. C.* The plants are infested with mites. As a remedy use paraffin emulsion. This insecticide may be made as follows:—Take a handful of soft soap and place it in the bottom of a pail with a quantity of paraffin. Work the soap and paraffin together with the hand until no more of the paraffin is absorbed by the soap. Reserve the superfluous oil for another mixing, and dissolve the mass of soap in warm water, when the specific is ready for use. A handful of paraffin soap is sufficient for making about three gallons of the emulsion.

Chrysanthemum Leaves: *A. H. T.* The trouble is not due to disease, but to the paraffin soap, which you have used at too great a strength. For soft-wooded plants such as Chrysanthemums this specific must be diluted with plenty of water.

Euonymus: *S. H. C.* The plants are attacked by mildew. Spray them every fourth day with liver of sulphur, half an ounce in two gallons of water, until the disease ceases to spread. Take the precaution to spray again next spring when the leaves are unfolding.

Fern Unhealthy: *C. M.* The injury to your ferns has been caused by eelworms. Dust the stems close to the ground with flowers of sulphur when the plants are damp. The pest breeds in the soil and may be destroyed by carbon bisulphide. With a stiff piece of wire make holes in the soil and pour about a teaspoonful of this specific in each hole. Carbon bisulphide is very inflammable, and the work should be done by a responsible person.

Grapes Diseased: *G. S.* The berries are attacked by the fungus Botrytis. The spread of the disease being favoured by an excess of atmospheric moisture, you should keep the air drier, and ventilate the house freely when the weather is favourable.

Grubs Attacking Cyclamen: *J. B.* Your Cyclamen are attacked by the larvae of a Weevil. It may be sufficient if the plants are occasionally turned out of their pots, and all the larvae that are visible picked out by means of a pointed stick and destroyed. If this treatment is ineffective, shake the roots free from the soil and larvae, and re-pot them in fresh compost. Another means of killing the grubs is to turn the roots out of the pots, and spray the roots and soil with carbon bisulphide.

Liliums: *Lily.* Bulbs of Lilium Harrisii are not worth growing a second season, but those of Lilium speciosum, if well established in pots, generally give better results in their second year. When the stems have died down at this time, plunge the pots under some 4 or 6 inches of leaf-mould or well-weathered ashes. The bottom of a wall is a good position for them. When they commence to grow next spring remove them from the covering material, correct the drainage, remove some of the top soil and replace it with fresh material. Both these Lilies are stem-rooting, thus when potting them allow plenty of room for future top-dressings. Lilium longiflorum var. formosum for flowering at Easter should be kept in a cold frame all the winter. Some time in February the bulbs should be placed in a warm house. The length of time they will take to develop flowers depends a good deal on the temperature. In an ordinary greenhouse they should bloom in about three months. Let them be well rooted before forcing is commenced.

Names of Fruits: *P. B. B.* Newton Wonder.—*C. J. Child.* 1, Wealthy; 2, Withington Fillbasket.—*Walter Barnes.* 1, Court-Pendû-Plat (syn. Wise Apple); 2, not recognised; 3, Deans' Codlin; 4, Sam Young.—*J. F. Woodman.* 1, Washington; 40, decayed; 73, Bergamotte Gundrey; 31, Rymer; 29, Brown Beurré; 21, Broompark.—*W. N. C.* 1, Not recognised; 2, Green Tiffing; 3, Dumelow's Seedling (syn. Wellington); 4, Alfriston; 5 and 8, Tower of Glammis; 6, Ribston Pippin; 7, Baxter's Pearmain; 9, Joséphine de Malines; 10, Autumn Bergamot.—*West Sussex.* 1, Black Norman;

2, Reinette de Canada; 3, Blenheim Pippin.—*Hortus.* Belle de Pontoise.—*S. Butler.* 1, Scarlet Pearmain (dessert); 2, Round Winter Nonesuch (culinary); 3, Bramley's Seedling (c); 4, Lady Henniker (c); 5, American Mother (d); 6, Castle Major (c).—*J. H. W.* The seedling Apples are both good, but not superior to varieties already in commerce.—*F. P. Dickson.* 1, Decayed; 2, Fondante de Cuerne; 3, Cox's Pomona; 4, Lane's Prince Albert.—*R. A. G.* 1, Durondeau; 2, Comte de Flandre; 3, Beurré Sterckmans; 4, Marie Benoist; 5, Ne Plus Meuris; 6, Bow Hill Pippin; 7, Annie Elizabeth; 8, Blenheim Pippin.—*G. N. M.* 1 and 5, Louise Bonne of Jersey; 2, Joséphine de Malines; 3, Marie Louise; 4, Vicar of Winkfield; 6, not recognised.—*J. C.* 1, Peasgood's Nonesuch; 2, Cullen; 3, Dumelow's Seedling (syn. Wellington); 4, Hoary Morning; 5, Tyler's Kernel; 6, Royal Russet; 7, Crown Apple; 8, Hormead Pearmain; 9, Reinette de Canada; 10, Ribston Pippin; 11, Pitmaston Golden Pippin. Pears, 1, decayed; 2, Beurré Clairgeau; 3, Bellissime d'Hiver; 4, Bergamotte Esperen; 5, Le Lectier.—*W. D. and Sons.* Stalks missing and the fruits decayed.—*R. V. S.* 1, Queen Caroline (syn. Spencer's Favourite).—*J. Foster.* 1, Duchess d'Angoulême; 2, Doyenné du Comice; 3, Marie Louise d'Uccle; 4, General Todleben.—*W. Thompson.* 1, Queen Caroline; 2, Allington Pippin; 3, Reinette de Canada.—*P. E. C.* 1, King of the Pippins; 2, Mère de Ménage; 3 and 5, resembles Lord Grosvenor; 4, Jolly Beggar; 6, Stirling Castle.—*Navton.* Allington Pippin.—*A. S. Arnold.* 1, Nouveau Poiteau; 2, Glastonbury; 3, Soldat Laboureur; 4, Bergamotte Esperen; 5, Beurré Bachelier; 6, Beurré d'Anjou.—*A. B.* 1, Gascoyne's Scarlet; 2, Blenheim Pippin; 3, Cellini; 4, Forge; 5, Bramley's Seedling; 6, Cox's Orange Pippin.—*J. A.* 1, Van Mons Léon Leclerc; 2, Marie Louise; 3, Malster.—*F. P. Dickson.* 5, Louise Bonne of Jersey; 6, Huyshe's Prince Consort; 7, Emile d'Hevst; 8, Léon Leclerc de Laval; 9, Smart's Prince Arthur; 10, Doyenné du Comice; 11, Beurré Bosc.—*P. H. R.* 1, decayed; 2, Passe Colmar; 3, Beurré Hardy; 4, Vicar of Winkfield; 5, Marie Louise; 6, Thompson's; 7, Cox's Pomona.—*H. R.* Golden Russet.—*E. F.* 1, Manks Codlin; 2, Norfolk Beefing.

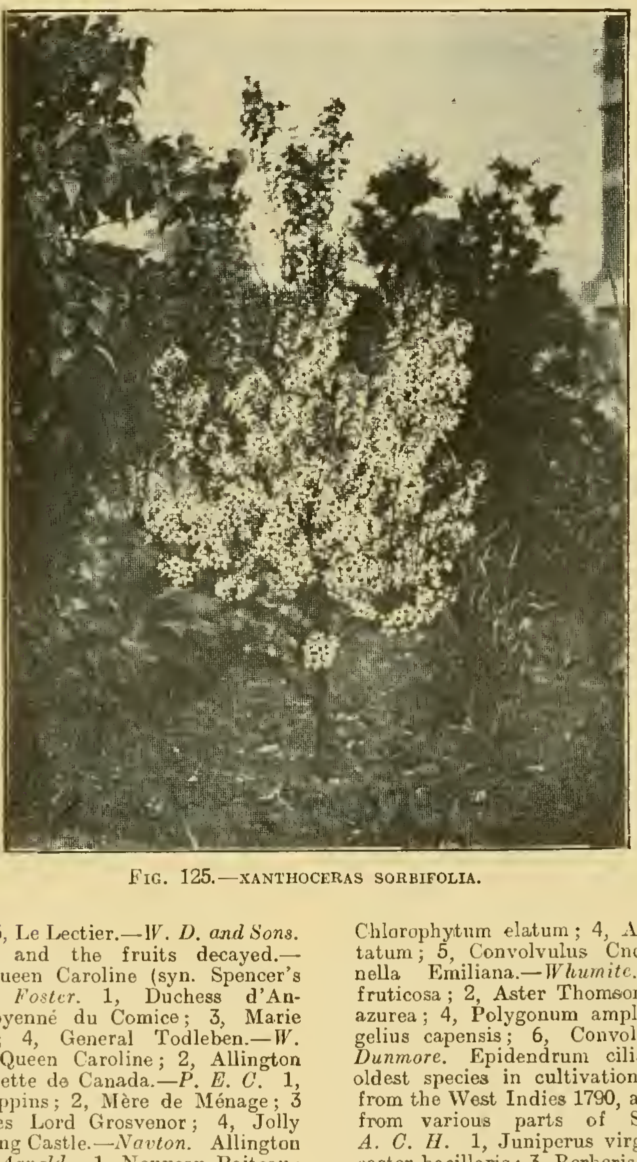


Fig. 125.—xanthoceras sorbifolia.

Names of Plants: *E. V. A.* and *G. A. C.* We cannot undertake to name varieties of border Chrysanthemums. Send them to some grower who can compare them with his collection; but take care to send better specimens than those that reached us, and pack them so that they do not become shrivelled in transit.—*W. C. S.* Liquidambar styraciflua.—*M. D.* 1, Viburnum Opulus var. sterile; 2, Rhus Cotinus.—*E. S.* Clematis Flammula. The plant may be propagated from seeds or by root-cuttings in February in a heated greenhouse.—*E. G. J., Marlow.* 1, Cladrastis tinctoria; 2, Caryopteris Mastacanthus; 3, Carpenteria californica; 4, Daphniphyllum macropodium; 5, Pseudotsuga Douglasii; 6, Abies concolor; the cones of this Conifer are not touched by birds, but the scales fall with the seeds when ripe, leaving the central axis intact.—*F. F.* We do not recognise the variety of Coleus.—*W. R. B.* 1, Probably Nautilocalyx sp.; 2, Ficus stipulata; 3, Chlorophytum elatum; 4, Aglaonema commutatum; 5, Convolvulus Cneorum; 6, Selaginella Emiliana.—*Whumite.* 1, Oenothera fruticosa; 2, Aster Thomsonii var.; 3, Salvia azurea; 4, Polygonum amplexicaule; 5, Phygelius capensis; 6, Convolvulus Cneorum.—*Dunmore.* Epidendrum ciliare. One of the oldest species in cultivation. First imported from the West Indies 1790, and since that time from various parts of South America.—*A. C. H.* 1, Juniperus virginiana; 2, Cotoneaster bacillaris; 3, Berberis aristata; 4, Probably Juniperus species. Please send again in summer; 5, Phillyrea media.

Old English Garden: *P. G. W.* Before you commence to make this new feature we feel that you would be well advised to visit various "Old English Gardens" in order to gain an idea as to the particular style of garden that would please your employer; because, as there is no definite style of garden that may be correctly termed Old English, much divergence exists. As a rule, the style of garden that is described as "Old English" is that which contains pergola-covered walks leading up to a central Water-lily pond, the remainder of the ground being laid out as flower beds and borders. But the plot at your disposal is rather too narrow for this style to be really effective. We suggest laying it out on the lines of a Queen Anne's Pleasaunce, dividing it into three compartments with two cross hedges of Yew, Sweet Briar or other Roses. The beds and borders in each division may be of whatever design that is fancied, except that they should not be of very intricate pattern. As to the proper kinds of plants for the Old English garden, these strictly should belong to the period of the garden, but there is no other reason why more of the hardy border flowers in general cultivation should not be used. An interesting garden might be made by restricting yourself to the use of the plants named by Shakespeare in one division. We are not acquainted with any book which treats solely with the style of garden you wish, but you would find helpful illustrations in any works on landscape gardening.

Peach Stem Unhealthy: *J. Irvine.* The stem is cankered, but it is not due to a fungus disease. The trouble is probably the result of unhealthy root action. Make an examination of the border to ascertain if the soil is suitable and the drainage perfect.

Retarded Crowns of Seakale and Lily-of-the-Valley: *M. S. A.* If you wish to retard the crowns yourself you should plant them in boxes of soil and place them in a cold store. You will find particulars of how to make a cold store with illustrations in the issue for November 7, 1908. After the plants have been treated they will require about twenty-eight days of forcing. If you only require to retard the plants for two or three weeks they may be placed in a bed of fine sand or cinders under a north wall.

Salvia Fireball: *J. Allen.* Sow the seeds in January in a warm house and afford the seedlings increased room as needed. The plants will be suitable for bedding purposes by the summer.

Winter Spinach Turning Yellow: *Conway.* Your plants are free from organic disease and insect pests, and we can only attribute the yellowing of the foliage to drought at the roots. You will probably find that the plants will grow out of their unsatisfactory condition now that rains are frequent.

Worms in Pots: *E. B. A.* Before making up the bed of sand for plunging the pots strew the ground with soot and lime, which will act as a deterrent to the worms; or you might use one of the ground insecticides, such as Vaporite. An article on the moraine with illustrations was published in the issue for October 18, 1913.

Xanthoceras sorbifolia (see fig. 125): *Shrub.* Xanthoceras sorbifolia is a native of North China, and when grown in the open forms a shrub 10 feet or more in height. It is amenable to pot culture, and would answer your purpose admirably as a pot plant. The compost should consist of two-thirds rich loam and one-third leaf-mould, with well-rotted stable manure and a little sharp sand added. The roots may be fed with waterings of liquid manure or top-dressed with a concentrated fertiliser. The flowers are produced in erect racemes 6 inches or so in length, and are pure white with a purplish blotch at the base; the inflorescence somewhat resembling the spike of a Horse Chestnut, to which this plant is closely related. The flowers are produced on the ripened wood of the previous year, so that attention must be paid to watering and feeding during the period of growth. An idea of the habit is furnished by the illustration.

Communications Received.—M. A.—A. J. C.—X. Y. Z.—T. L.—W. B.—F. H. C.—W. D.—G. F.—R. V. S.—Whurmite—J. B.—J. F.—Ireland—E. G. L.—A. C. H.—A. M. S.—J. A.—M. S. A.—S. S.—A. S. A.—P. H. R.—M. D.—T. J. H.—F. S.—H. D.—C. W.—W. P.—A. H.—C. H. P.—A. P.—F. S. E. D.—G. W. T.—G. W. R.—P. J. P.—J. B.—A. J. H.—W. W. G.—W. T.—P. M. C. V.—Dr. D., Hereford—Count Rocchetta—A. L. M.—T. L.—B. & S.

THE
Gardeners' Chronicle
No. 1,455.—SATURDAY, NOVEMBER 14, 1914.

CONTENTS.

Alpine garden, the—
  Dwarf Conifers for the rock garden .. 320
  Helichrysum bellidioides 320
America and the potash supply 326
American Gooseberry mildew, the control of 319
Apples, the colouring of 328
Belgian and French readers, page for .. 329
Belgian fruit industry.. 32
Belgians, employment of 328
Books, notices of—
  Botanical Magazine.. 323
  Roses in Western India 321
Broadway, Mr. W. E., appointment of .. 324
Bulb garden, the .. 322
Chatsworth in 1844 .. 326
Dahlia society in U.S.A., proposed 326
Edinburgh fruit and vegetable market .. 326
Eucalyptus Globulus flowering in the open 325
Farrer's, Mr. Reginald, explorations in China 3 8
Gardener as musical composer 326
Greenhouse construction 324
Kew notes .. 327, 328
Law note—
  Nursery for women gardeners 332
Market fruit garden, the 317
Obituary—
  Coombs, James .. 331
  White, Nelson B. .. 331
Orchid notes and gleanings—
  Brasso-Laelio-Cattleya Gladius .. 319
  Cattleya Alpha .. 319
  Cattleya Birex .. 319
Pears in Kent 328
Picea ajanensis 327
Potato Carisbrooke Castle 327
"Pour nos amis français et belges" 329
Roll of honour, the .. 326
Societies—
  Debating 328
  Derbyshire Gardeners' 330
  National Chrysanthemum 330
  Royal Horticultural.. 330
    (Scientific Committee) 330
  Royal Hort. of Aberdeen 331
  Ventnor Chrysanthemum 330
Trees and shrubs—
  Magnolia grandiflora ferruginea 320
  Ringing of trees, the 320
Vegetables—
  Green vegetables in winter markets .. 319
War items 325
Weather in October .. 328
Week's work, the 322, 323

ILLUSTRATIONS.

Grammatophyllum speciosum 325
Iris felina 3:1
Leonotis leonurus 327
Meconopsis quintuplinervis 318
Primula, a new Chinese 319

THE MARKET FRUIT GARDEN.

THE second prolonged drought of the season was effectively broken in the middle of October. The first lasted from April 13 to the end of June, and the second from July 24 to October 12, inclusive. Neither period was one of absolute drought, as there were a few short rainy interludes. But in the 23 weeks which covered the two droughty periods only 3.71 inches of rain fell at my station. This, I think, must be nearly or quite a "record" of scanty rainfall for any district in this country for a period only three weeks short of half a year. July was a month of average rainfall, and since the second drought was broken the downfall has been frequent and considerable. It was welcome for many reasons, but at the time of writing sufficient rain has fallen for present purposes, and a fine period would be beneficial. Except for filling ponds and flushing springs, no great quantity of rain is now required, so far as human judgment can determine, for some time to come. There has been plenty to moisten the soil for fruit planting and the digging of orchards, and for either purpose an excess is disadvantageous. Provided that a sufficient water supply for man and beast is secured, it seems to me that the rainfall of November and the three winter months can hardly be too small for agricultural or horticultural purposes. At present, however, numbers of ponds which have been completely dried are not a quarter full, while springs are not running freely, and wells are short of water.

Early Leaf Fall.

Although there has not been a single frost here since the spring to show on thermometers 4 feet from the ground level, fruit trees have shed a great quantity of their leaves. Plums have been bare for weeks, and Pears nearly so, while the foliage of Apples is brown, and much is on the ground. The droughty season, no doubt, is accountable for the early fall of the leaf.

The Penalty of a Great Fruit Crop.

So far as established trees are concerned, there is every reason to expect short crops of Plums, Apples, and some varieties of Pears next season where this year's yields have been very heavy. In some parts of the country frosts thinned all kinds of fruit severely, and growers in those districts have reason to hope for good results next season, as the weather has been exceedingly favourable to the maturing of fruit buds. Similarly, trees which were too young to bear full crops this year may do well in 1915. But no degree of favourable weather could develop the dormant buds at the bases of the fruits of this season, which in districts that did not suffer from frost were extremely thick on the trees.

Black Currants.

Where the drought has been most severe, it may be predicted confidently that next season's crop of Black Currants will be one of the poorest ever known. Never before have my bushes made so little new growth as they have made this season, and never before were the buds as small at this time of year as they are now. Black Currants need more moisture than any other kind of fruit, and they have been parched for the lack of it during the greater part of the last six months. The drought in my district, however, was more severe than it was in any but a limited area of the country elsewhere, and where there was rain enough to promote full extension growth a less unfavourable prospect is probably noticeable, or possibly even a quite favourable one.

Damage by Earwigs.

Apples of various kinds in unusual numbers have been found in the course of packing damaged by small circular and shallow holes. Earwigs were suspected as the delinquents, and Mr. Theobald confirms the suspicion. He has found that similar damage was done when earwigs were shut up with Apples.

An Unknown Fruit Pest.

This season I have noticed for the first time a large number of very small caterpillars on Apples when the fruit was being packed. The largest were barely half an inch long, and the great majority were smaller. This larva is slender, and it has a black-pointed head, while the back is brown, with grey markings. It has sucker feet. In some cases the larva was found in a tiny web at the stalk or eye end of the Apple, in which, presumably, it was about to pupate. In other cases it was found at large on the fruit, though a web was usually to be noticed. Small surface holes or furrows of irregular shape are attributed to the action of this caterpillar; but this damage was seldom found. At present attempts to get the larva identified have failed.

Scabby Apples.

It might have been supposed that there would be very little scab on Apples in such a dry season as the present one has proved. A good deal, however, has been found on certain varieties not sprayed for preventing an attack, and on two that were sprayed. The two latter are Irish Peach and Duchess of Oldenberg, varieties which are to be improved off the face of my land next spring by topping and grafting with more profitable kinds. Both were sprayed once with lime-sulphur when the Apples were quite small, and yet Irish Peach was poisoned with scab, and hardly marketable, and the other variety was only less badly damaged. Cox's Orange Pippin was attacked to a considerable extent; but spraying this variety against the disease was discontinued this year because more or less defoliation had resulted from the operation in previous seasons. Allington Pippin was scabby where it was not sprayed, but not where it was so treated. Worcester Pearmain, although sprayed, suffered to a small extent. The only other varieties grown by me that are commonly and materially injured by scab are Lord Grosvenor and Bismarck. They were sprayed with lime-sulphur, and were almost entirely free from the disease. There is no doubt that there should be a second spraying against scab two or three weeks after the first. In future Cox's Orange Pippin in my orchards will have to take its chance of defoliation; only the spray stuff will be made weaker than it is for other varieties, and will be applied twice. In spite of scab, the proportion of clean fruit of this variety was large, and the size and colour proved exceptionally fine.

The Planting Season.

Land properly prepared for fruit planting worked remarkably well after the recent rainfall had moistened it. There was no need to wait for the leaves of trees to wither before transplanting them, as there was last year, and it is generally agreed that November is the best month for planting. Certainly the labour is less than it is usually later in the season, when the land is apt to be wetter. So long as it is moist enough to be stamped firmly over the roots of the trees it is in good condition for the work. Firm planting seems to me desirable, and I would rather have the soil too wet than too dry. A few days ago I was comparing trees practically "puddled in" five years ago, because the land was very wet when they were planted, and two rows deliberately "puddled in" with a rammer by way of experiment, with adjoining rows of trees moderately stamped in when the soil was not saturated with water. No difference was noticeable in the growth or health of the trees. This was the case also in an earlier trial. *A Southern Grower.*

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

V.—HIGH ON THE HILLS.

THERE is but one hill here, and it is a huge 15,000-feet decayed wisdom tooth of limestone, so porous that its rare waters have a way of disappearing from one day to the next, only to reappear 10,000 feet lower down, where they gush forth again in springs as clear as white diamond. Isolated, then, and arid, this mountain and its ridges can yield but a limited and disappointing flora. And a Chinese disappointment is represented by this: 7 Primulas, 5 Androsaces, 4 Meconopsis, and so on to match; often, upon those enamelled high slopes of coarse turf, sparkling with Irids, with Primulas, with Poppies, azure and saffron and lavender and violet, have I recalled a certain famous voice in horticulture which told me once, in tones that informed all Chelsea Show, that "China was played out!" For, so soon as you have left the coppice and scrub zone, at about 10,000 feet, do the symptoms of this exhaustion begin plainly to appear, dappling the huge lawns thickly with their jewels of colour, till one feels treading the sainted sward of some Cinquecento picture. Meconopsis integrifolia stands stiffly up in awkward candelabra of moony pillars up and down the slope—a noble and imposing thing, yet graceless, lamping, and without refinement of habit. In stonier places or cliff-chinks bristles the promise of M. rudis, painfully hostile to the touch, and openly biennial, yet a beautiful species, with its spires of great crumpled silken blooms in shades of azure, steel or indigo. No less biennial again, but even more beautiful, is a little species close to M. Delavayi, with a stature of only 7 inches or so, and ample tasselly blossoms, held boldly up, of finest Coan filminess and sheeny tone of blue and violet. This dainty plant dots the grassy slopes at 12,000 feet, loving the cooler exposures, and having a special tendency towards gully-walls and small, ledgy slopes of out-cropping limestone. For gardens, however, the most important, probably, of all Asiatic Meconopsids will be M. quintuplinervis (see fig. 126) for this stands out in its race and section not only in its beauty, but also in being manifestly perennial, to the point of permanence. It seems to emit very short, woody rhizomes, forming up into a close tuft of leaf-rosettes often about 8 inches across. From these shoot up the bare scapes, each hanging out a folded bell of lavender-blue silk (which only on days of rare perfection widens out into a shallow pendant paten), and, together with these, on one clump may be seen the skeleton pods of last season and the empty sockets from which sprang the scapes of the one before. So that Fedde's "versimileter monocarpica" (hinting the benefit of a doubt as it does) must now give way to the glorious truth that here, in the grandest of all groups, the group of M. grandis, we have at last a species of outstanding beauty, which is also dowered with perennial virtues, shared only (outside Europe) with unobtainable M. bella and dingy M. grandis. On its one fleeting visit to cultivation, too, M. quintuplinervis had been misprized by those who might have known better had they seen fit to trouble the pages of the Pflanzenreich, for they confused it with M. simplicifolia! The photograph shows its swanlike grace of port, as its blue dewdrops swing and sway all up the long Alpine slope of turf, rising amid rough grasses, from the loose and springy vegetable soil. So full are the lawns that one can delay little over Fritillaries, citron yellow, or dingy, as delphinensis; on golden Gageas, creeping tiny sweet Loniceras lurking amid the highest grasses; on saffron Rhododendrons in miniature, blandly gleaming on limestone boulders, while the slopes are filled with another neat dwarf aglow with trusses of lilac-lavender; an Aster like A. alpinus must go unheeded, and so must a charming small Trollius with great suns of gold; and as heartily as we can will we ignore a clustered pink Cardamine, which is always getting itself mistaken for a Primula, as, indeed, are also two very lovely Irids of these elevations; but they are so exquisite that I must pause on their charm of soft Lilac-blue blossoms. One, which occurs also at lower elevations, is sturdier and stockier in growth than the other with larger flowers, and the falls brindled and mottled tabby-like, so that I think of her for the present as I. felina (see fig. 128); more entrancing yet are the fairy-like elegance and the profuse wiry stems of the other, whose waxen, snowy falls are hemmed and dotted with deep velvet spots of pure violet, till one can call it nothing else but I. pardalino. No photograph is capable of conveying their full loveliness except to one who knows Iris, and feels the least hint of their charm as he should.

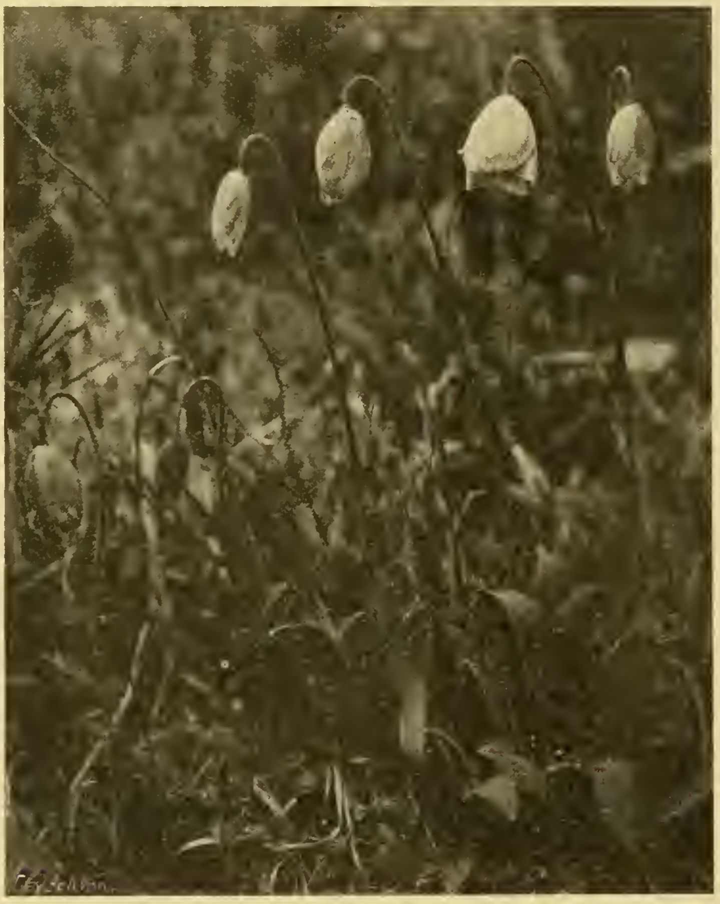


FIG. 126.—MECONOPSIS QUINTUPLINERVIS IN CHINESE HABITAT.

But the sovereign of these slopes is a quaint Primula of the Nivalis group, yet perfectly powderless. It is a rank and stately plant, with a rosette like a Cabbage's, from which, when the leaves are developed, the 9-inch stem towers up, and unfolds a great crowded ring of violet stars, arranged on arching fine pedicels in a rayed, wheel-like head. (This is the plant shown by Veitch at the Conference of 1913 under the false name of P. "purpurea"—this being a discarded later synonym for P. nivalis macrophylla.) It gives ample warning here that it will probably prove as miggy and peevish in cultivation as are almost all close relations of P. nivalis; for it has a long, woody neck to rot with, and occurs also only in isolated plants, though numerically abundant in the vast expanse of those Alpine lawns, where it is found, indeed, sporadically, from 9-14,000 feet, but especially loves cool slopes and folds of the hill or banks of very coarse grass, where there is a shelter of fine low scrub. More beautiful even than this, and offering far better hopes to horticulture, is the nameless P. No. 10, of which I send a photograph (see fig. 127). For this has no woody neck, but only a stout web of Rose-red roots; and instead of occurring in isolated plants it abounds in wide sweeps and drifts of beauty at much higher elevations than those mainly occupied by the last, beautifying the highest ridges at 15,000ft., in open soil-slides of red or brown loam (all loose, with fine limestone chips), and descending into the beck beds, where it shines pure and hearty in the shingle. Pictures are inadequate; it unfolds lovely toothed leaves of lucent green, often powdery, simultaneously with the development of the densely snow-white scape, which, at 3-4 inches, expands at once a head of larger, ampler flowers of clean Lavender-blue, smelling like a sweet Primula that has long been kept in a cupboard full of mice. The pedicels are short and stiff, the head, therefore, a solid dome. A second tier of blossoms is often present, but hardly develops above the rest.

For otherwise there is but little to mitigate the austerities of those uppermost limestones. From the cliff-ledges hangs a very noble great white Anemone that might call A. narcissiflora cousin; Isopyrum grandiflorum shows its sweet cups of golden-hearted, pearly paleness in every cranny; the screes have mats of a blue Wulfenia-thing, and a greenish-golden dwarf Ranunculad; on the highest point of all (a turfy lawn) is Androsace mucronifolia, and every rock of the crête is cushioned with huge masses of A. tapete, which has three times the spread but all the charm and habit of A. helvetica, while its foliage is so yellow as to give its hassocks almost the ashen whiteness of A. imbricata. Beyond these the rocks at 15,000 are gaunt and bare, and the most promising Androsace of all is found far below at 4,500 feet, where, in the hottest rocks, and coarsest, earthy, stony banks, spread carpets of A. longifolia (?), with all the habit of A. alpina, but with larger snow-white flowers; and, from its sites and soils and habit, an incomparably sounder hope of permanence and prosperity in English gardens, even in the heats of Kent and Surrey, no greater than those of Kansu. *Reginald Farrer.*

---

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26 and October 17 and 31.

THE CONTROL OF AMERICAN GOOSEBERRY MILDEW.

(Concluded from p. 304.)

The value of early tipping is exemplified in the following instances, called to mind practically at random:—

West Sussex.—Grower in 1912 prosecuted for non-notification of disease; good crop totally ruined. Diseased fruit destroyed and bushes tipped early. No spraying, but ground treated with lime in March. Excellent crop of clean berries in 1913 and 1914. Bushes very slightly diseased now.

A number of plantations in the Worthing district were infected in 1910. Growers were alarmed and tipped early. In only one case has disease reappeared until this year, when two or three plantations got reinfected slightly.

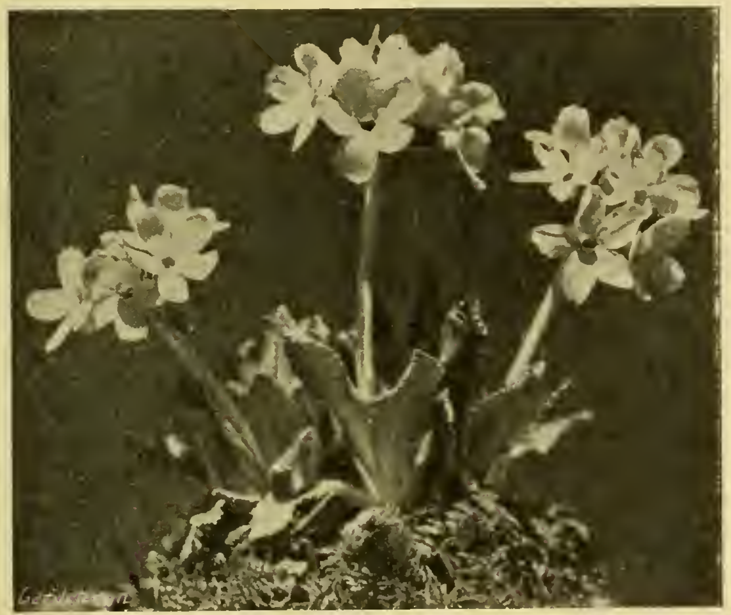


Fig. 127.—new chinese primula (farrer's No. 10).
See p. 318.

Kent.—A large number of plantations in neighbourhood of Bromley in 1910. Only early tipping resorted to, but disease has been kept in check, and in many cases has not reappeared.

A grower in Mid-Kent neglected early tipping but sprayed. Crop in 1913 unfit for market. Persuaded to tip in September. Clean crop in 1914; grower very enthusiastic.

A young twelve-acre plantation in Mid-Kent became infected, and in 1908 nearly every shoot was diseased. Some spraying and early tipping done the same year. Little disease seen the following year and none in 1911 when plantation was "freed." Reinfection, probably from neighbouring gardens, in 1912.

South-west Kent.—Garden scheduled in 1911, some fruit diseased; tipped early. Traces of disease found in 1912, none in 1913.

These cases could be paralleled in every county and can be regarded as typical of scores of cases in all parts of England.

Early tipping is thus advocated, not as a positive cure in every case, for one occasionally comes across a garden where early tipping is said to have been done and still diseased fruit is found, and it is doubtful if any fungous disease can be quite eradicated by any known remedy; but as a practical means of keeping the disease in check and saving the crop. If a grower is really determined to check the disease and he is able to supervise the tipping the disease can be kept in hand, and scores of growers in England are doing this. But where a grower has a large acreage of Gooseberries and has to leave the work to his foremen, the work is often delayed and shirked for one reason and another until the soil becomes thoroughly infected and the crop is lost. Inspectors can point out what should be done and are able to discover the disease in its early stages, but they cannot force a grower to do the work properly or to time, although they have the power to prosecute him afterwards when the mischief is done. I am convinced by experience that any grower who can look after such measures himself can if he likes keep American Gooseberry mildew in check, while, on the other hand, any grower who has lost his crop has lost it by neglect either because he is unwilling, or, owing to a very large acreage, unable, to tip his bushes early and properly. *G. C. Gough, B.Sc.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA BIREX.

A very pretty Cattleya, raised from bicolor × Rex by Mr. Duncan, gardener to C. J. Lucas, Esq., Warnham Court, Horsham, has blossomed, and a flower has been submitted for opinion as the cross was not certainly recorded. It has a strong resemblance to C. Iris, but, making allowance for the substitution of C. Rex for C. Dowiana aurea in its parentage, the features prove the parentage given above. The flower, which is well proportioned, is 4 inches across, the petals over 1 inch wide, and the sepals narrower. Both sepals and petals are deep canary yellow with a slight buff shade. The lip has the short side lobes, only half as long as the fleshy white column, pale yellow. The median narrow portion and expanded front are magenta-rose with a narrow-toothed whitish margin. As with C. Iris, much variation in the seedlings may be expected.

CATTLEYA ALPHA.

Pantia Ralli, Esq., Ashtead Park, Surrey (Orchid grower, Mr. Farnes), sends us the first flower of a cross between C. Whitei and C. Mendelii. The seeds were sown a little over three years ago, and there is still a little batch to come into bloom. It is interesting, as the effect of C. Schilleriana, which took part with C. Warneri in the production of the natural hybrid C. Whitei, imported by Messrs. Low from Bahia, and awarded a First-class Certificate on July 25, 1882, is entirely lost except for a slight change in the form of the middle of the lip.

Cattleya Warneri is well known to hybridists as a good and dominating parent, and in the present hybrid a distinct proof of this is given, for the flower seems in form and colour to be nearly intermediate between that species and C. Mendelii, the leaning being towards C. Warneri. The sepals and petals are silver-white tinged and slightly veined with rose-pink. The base of the lip is white with a ray of purple lines extending to the rich yellow disc. The front half of the median lobe of the lip is mauve-purple. The lip is the interesting feature, as although there is no trace of the colour of C. Schilleriana, the erected side-lobes and attempt at constriction where they join the front lobe tells of that species conclusively.

BRASSO-LAELIO-CATTLEYA GLADIUS.

A very interesting though not showy hybrid has flowered with E. Whiteway, Esq., Feltham Lodge, Feltham (gr. Mr. J. Tait).

The parents were Cattleya bicolor × Brasso-Laelia Digbyano purpurata, and, as usual, the distinct species with its firm substance proves too strong for the hybrid, and in the progeny the trumpet-shaped fringed lip of the Brasso-Laelia and its thin lanceolate sepals disappear and the features of C. bicolor prevail. The flower, which is of thick texture, has nearly equal greenish-cream coloured sepals and petals. The lip has the thickened column of C. bicolor and its narrowed median portion. The front lobe flatly arranged is white with the front portion rose-purple.

VEGETABLES.

GREEN VEGETABLES IN WINTER MARKETS.

Popularity appears a fleeting phase among vegetables as among individuals; what delights the people at one epoch seems to fall out of favour at another. Some vegetables are fast favourites for long periods, other varieties come and go quickly. They may belong to one family, and be only gardeners' varieties, but they are quite different to the grower, who must accommodate himself to different methods of culture and follow the changes of taste and fancy.

A few years ago the vegetables most in demand were a small variety of the Cabbage family called Coleworts, and also Savoys; as slight frost did not seriously affect these products they were the mainstay of the market from November and onwards, with more heart at the commencement of winter, and decreasing solidity from Christmas and forward. Large growers were much occupied on Thursday and Friday in preparation of as many dozen bunches of Coleworts as possible ready for Saturday's market, as they had several acres to work away during the season. Coleworts could not be pulled in the frost nor when rime was on the leaves. Thus provision had to be made the previous afternoon so that they might be tied or bunched dry if they were to be sent to market in approved condition. When frost really set in, as soon as the sun melted the rime, all hands from all quarters were summoned to fork up as many as possible, in case the frost went deeper, as then the field would be locked up and a temporary famine would ensue.

Savoys were also planted in wide breadths, but as these were generally sent to market without roots they were accessible during frost, only if the snow was deep they might be hard to find; they could be cut off with a sharp spade instead of a knife if the frost was intense. There were also varieties of Broccoli available in winter: Hardy White, Brimstone and Purple Sprouted, all of which came in turn and made some change.

Now consumers that never thought of anything more than a bunch of Coleworts, generally called

Collards, for Sunday's dinner expect to secure Brussels Sprouts, White Broccoli, or Cauliflower, and it is marvellous to see how widely these crops are raised to meet the demand.

White Broccoli or Cauliflower arrives from Kent, from Norfolk, from Penzance, and in pacific times from St. Malo, Cherbourg, and even from Italy, via the St. Gothard Tunnel.

We have Brussels Sprouts from all quarters, and quantities arrive from Bedfordshire, where many vegetables are cultivated with great success. Drought has been severe there as well as elsewhere, and some of the Brussels have a severe attack of aphides, which is a great trial to growers, as these small enemies seriously affect the sale; they often do much mischief ere they are observed, and then are hard to dislodge. *W. W. Glenny, Cecil House, Barking.*

THE ALPINE GARDEN.

DWARF CONIFERS FOR THE ROCK GARDEN.

There are many dwarf-growing or low-spreading Conifers that are suitable for planting on rockeries. They will grow well in any good soil, and, provided the roots are not too wet in winter, will flourish either in full sun or in partial shade. As the majority of these Conifers are very slow-growing there is no likelihood of them becoming too large for the rock garden until they have been planted for many years. The following is a selection of some of the best of these dwarf Conifers, all of which are hardy and robust.

Abies balsamea var. hudsonica.—This is a short-growing form of the Balsam Fir, and is a native of the mountains of New Hampshire. It is a Silver Fir in miniature, dark-green in colour, and of very slow growth.

Cedrus Deodora var. nana.—This is a very scarce plant, the few specimens I have observed being less than 1 foot high by 3 feet to 4 feet in diameter. The plant is of a spreading and comparatively fast-growing habit; the ends of the branches are pendant, and of a bright glaucous hue. It is suited for the back of the rockery or where an overhanging plant is required.

Cupressus Lawsoniana var. densa.—Of broadly pyramidal outline, this plant has dense, tufted foliage, and grows very slowly, specimens twenty years old being only 3 feet or so in height. The varieties nana, compacta, and minima are all very similar to densa.

C. obtusa var. nana (densa).—This is one of those gems that need only to be seen to be appreciated. The foliage is of a dark, cheerful green, dense and tufted, and arranged in a regular manner without appearing formal. In habit the plant is pyramidal, and is one of the slowest growing trees known to me.

C. obtusa var. nana aurea.—This resembles the last, except that it is of a bright, golden-yellow colour, and somewhat freer in growth.

C. pisifera var. nana rarely exceeds 1 foot in height by about twice as much in diameter. It is of a bright-green colour, with closely appressed moss-like foliage, and makes a fine subject for the rockery. The sub-variety, nana aureo-variegata, is irregularly marked with bright yellow.

Cryptomeria japonica var. Lobbii nana.—A very dense plant of a regularly pyramidal shape, with fine, grass-green foliage in summer, changing to a bronze-red tint in winter.

Juniperus chinensis var. nana.—An alpine form of the Chinese Juniper with a low-growing, spreading habit and closely-appressed, dark-green foliage. If the ends of the shoots are cut back the plant can be kept to a dense, rounded tuft, but if allowed to grow unchecked it forms a roughly saucer-shaped plant with a number of long, feathery branches. Sub-varieties include nana glauca, nana albo-variegata, and nana aureo-variegata, all of which are described by their names.

J. chinensis var. pfitzeriana.—This is a spreading and comparatively fast-growing plant, with fine foliage of a glaucous-green tint. It will make a relatively large plant if allowed room to develop.

J. communis var. alpina (syn. canadensis).—A dark-green, spreading form of the Common Juniper with acicular leaves a ¼ inch in length. The plant requires plenty of room to develop. The sub-variety alpina aurea (J. canadensis aurea) is not so robust in growth, and the foliage is suffused with a deep, golden hue.

J. Sabina var. procumbens.—In this form the foliage is comparatively long, prickly, and of a bright, glaucous hue. The plant is a compact grower, and forms a dense, rounded tuft rarely exceeding 1 foot in height.

J. S. var. prostrata.—This variety is aptly named, as it has long, slender stems with few side branches lying flat on the ground. The foliage is very small, and of a dark-green colour.

J. S. var. tamariscifolia.—A handsome plant with dense, glaucous foliage and a rounded, compact habit. It grows at a medium rate, and is one of those plants that can be used almost anywhere in the rock garden.

J. virginiana var. globosa is a round plant with reddish-green, tufted foliage and slender wood. It is of slow growth, and takes a long time to attain to any considerable size.

J. virginiana var. kosteriana.—This plant makes four or five main branches, which spread horizontally on all sides a few inches from the ground. Each stem is well furnished with side-branches clothed with glaucous-green foliage, the whole plant being less than 1 foot high by upwards of 6 feet in diameter.

Varieties of Picea excelsa.—There are many dwarf forms of the common Spruce, all of which are useful for the rockery. They roughly fall into two classes, viz., those of a round, dense habit, such as the varieties clanbrassiliana, Gregoryana, dumosa, and Maxwellii, and those in which the habit is flat and somewhat spreading, such as in pumila and pygmaea. The variety Remontii makes a handsome, pyramidal tree in miniature, the foliage being dark, glossy-green, with every branch in its proper place.

Pinus montana.—Strictly speaking, this is not a dwarf plant, but its irregular, picturesque style of growth and comparatively dwarf habit render it a suitable subject for the background of the rockery. In time it forms a small tree some 10 feet in height, with dark-green leaves and irregular branches. The variety Mughus is a dwarf form of the same habit, and can be planted anywhere on the rockery.

P. sylvestris var. globosa.—A dwarf, pyramidal shaped form of the Scotch Pine, with dense, glaucous foliage and a neat habit. It is a handsome plant, attaining to a height of 4 to 6 feet, but growth is slow.

P. Strobus var. nana.—A neat little round form of the Weymouth Pine, with short branches clothed with thin needles of a glaucous hue. It is quite a compact grower, and can be recommended as a small Pine for the rockery.

Thuya occidentalis var. Hovei.—This dwarf Conifer forms a neat pyramid of short, feathery branches which are bright green in summer but turn to a bronzy-red in winter. *J. Clark.*

HELICHRYSUM BELLIDIOIDES.

This charming Daisy-like plant grows with remarkable freedom, especially when planted in a moraine, where it spreads with a rapidity one would hardly expect. The plant evidently does not suffer from the presence of lime in the soil, and in a moraine composed of whinstone chips with lime rubbish mixed with it, it spreads rapidly. The flowers close in dull weather and towards evening, but that tends to preserve them longer in beauty. *S. Arnott.*

TREES AND SHRUBS.

MAGNOLIA GRANDIFLORA FERRUGINEA.

This shrub has again failed to flower here, and it is the twenty-first year to my knowledge. Tradition goes back thirty to forty years more, and still the record is of failure. Plants of the true M. grandiflora growing in similar conditions flower here almost every year. This season has been an extra good one for the flowering of all kinds of trees and shrubs—certainly one of the best that I can remember—and it would be interesting to know if the above variety has flowered anywhere in this country this season or at any other time. The plant is very distinct from the typical variety in the foliage, which in M. g. ferruginea is of a much brighter green, more glossy, and has a distinct twist in the plane of the leaf-blade; both have the rusty appearance underneath the leaf. Some of our best nurserymen are well aware of the shyness of this variety in flowering and do not propagate it, but other plants may exist and puzzle their owners by refusing to flower. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

THE RINGING OF TREES.

The following article by Mr. L. A. Boodle is published in *Kew Bulletin* No. 6, 1914 :—

"The injuries sometimes inflicted on trees by squirrels were described a few years ago in the case of young trees of Thuya and Cupressus, specimens of which had been sent to Kew by Mr. R. B. Rogers, of Hexworthy, Launceston, Cornwall.[*] The immediate injury is to the bark,[†] which is stripped off the trunk in places, sometimes on one side, sometimes all round. That is, in the latter case the stem is completely ringed, and an experiment in plant physiology is the outcome of the squirrels' labour. In the examples referred to the damage had been very severe; long strips of bark had been removed, so that in one case a considerable portion of the trunk appeared as a pole of bare wood with islands of bark upon it. Branches of the stem inserted within some of these islands were still living and bore healthy foliage, although their isolation by the removal of the bark from around the islands had taken place more than two years previously.

"Some further specimens injured in a similar manner have recently been received from the same donor. In one of these the bark had been ringed, and the tree had eventually died, but it was found by examining the annual rings that the part above the wound had lived for at least four years after the ringing operation. Other specimens examined showed from three to five years' growth above the ring-gap.[‡]

"In these cases the wood exposed by the injury is perfectly bare, and of course no new layers of wood have been formed on its surface, as the stripping of the bark involves the removal or death of the cambial layer. The outer layers of the wood exposed to the air soon become dry and useless for conduction, hence it is clear that the older layers of wood must be capable of continued fairly rapid transference upwards of water coming from the roots, as evidenced by the continued life of the parts above the ring-gap. In the case of the specimens previously examined, though some of the branches remained fresh the water supply had proved insufficient to keep the tops of the trees healthy.

"The effect of ringing differs in different kinds of trees. Various experiments have been made, and a study of the results of the operation proved useful in the early days of plant physiology in leading to a knowledge of the route of conduction of water and of elaborated food substances in plants. Experiments in ringing were made by

---

[*] A. W. Hill, "Conifers Damaged by Squirrels," *New Phytologist*, Vol. 10, pp. 340-342, Pl. 7.

[†] The word "bark" is used here for convenience in the vernacular sense to include all the tissues outside the wood (or outside the cambium).

[‡] By this is meant the annular gap in the bark made by the operation of bark-ringing.

Malpighi and Ray, of whom the latter§ mentions that a Holly tree lived for several years after a ring of bark of a hand's breadth had been removed from the stem so as to leave the wood bare. Since this early observation numerous experiments have been made on several kinds of trees, and form two classes, viz. :—(1) bark-ringing, *i.e.*, the stripping off of a ring of bark as in the cases mentioned above; and (2) wood-ringing, *i.e.*, making an annular cut into the stem through both bark and part of the wood.

"Bark-ringing.—The effects of bark-ringing depend upon the interruption of the bark and the exposure of the wood. The break in the continuity of the bark prevents the normal conduction of elaborated food substances (albuminous and carbohydrate) from the parts above the ring-gap to those below, since these bodies are ordinarily conveyed through the bark‖ (or more precisely the phloem). Hence, if there are no leaf-bearing branches on the stem below the point of ringing, starvation of the roots ensues. This may be slow, seeing that there is a store of food in the bark of the roots and of the base of the trunk to draw upon, but the growth and absorptive powers of the roots will eventually be checked, and in some cases the functional failure of the roots may be the final cause of the death of the tree.

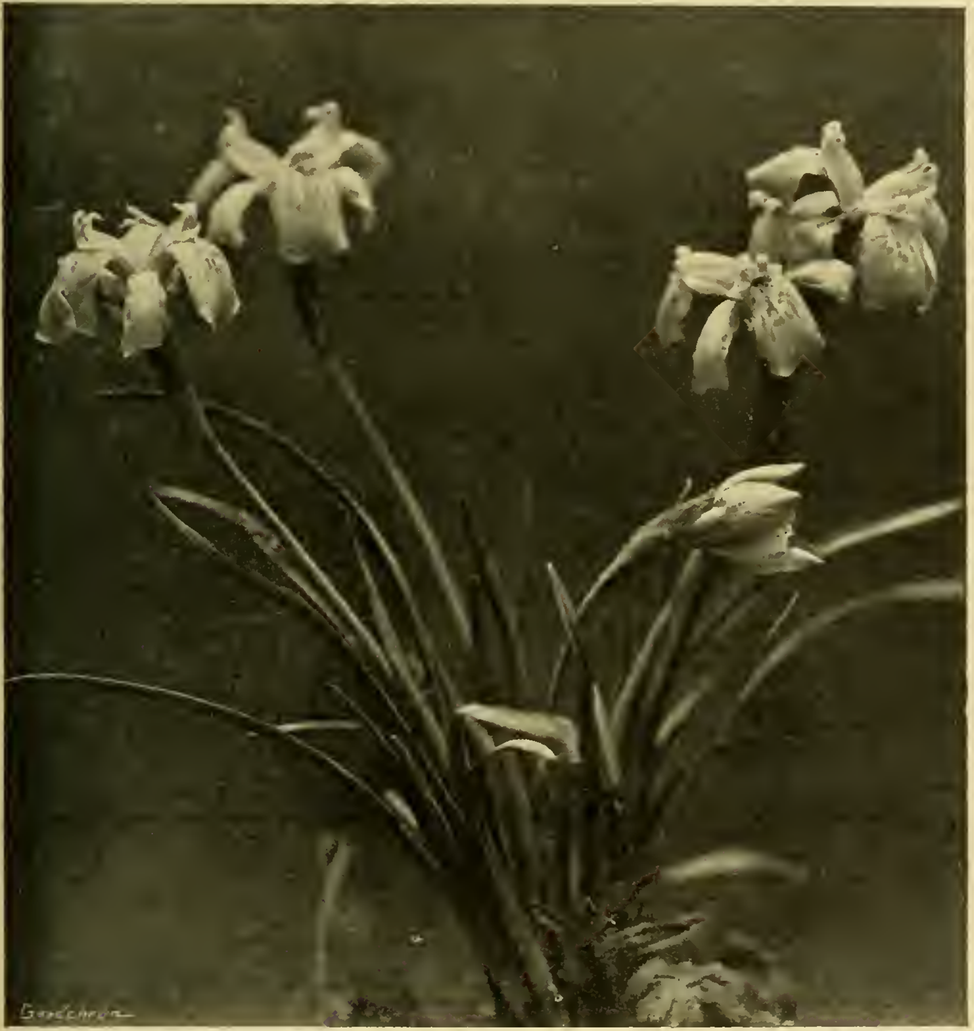


Fig. 128.—Iris felina hort. : flowers white with deep violet-coloured spots. (See p. 318.)

"The exposure of the wood, where the bark has been removed, introduces other factors endangering the life of the tree. The supply of water for the upper part of the tree has all to pass through the wood at the level of the ring-gap, and from several causes the conducting power of this wood tends to become more and more curtailed until the requisite amount of water can no longer pass through it. Owing to the surface of the wood being in contact with the air, the outer layers of wood become dry and useless for conduction. This alone may soon render the water supply insufficient in species with only a thin zone of sapwood, since true heart-wood is incapable of conducting the transpiration stream. On the other hand 'sap-wood trees' (*i.e.*, those which form little or no heart-wood) can usually survive the operation of ringing for a long time, *e.g.*, several years. Among these the progressive drying of the wood from without inwards may finally restrict the area of functional wood until it reaches the critical point, or this result may be accelerated by a fungal disease attacking the wood and rendering some of it useless. Again, in trees which form heart-wood, the production of this accounts for the loss of a certain proportion of the wood available for conduction. While no new wood is added at the level of ringing, and functional wood is lost externally by drying, there is a further loss internally owing to the yearly conversion of some sap-wood into heart-wood.

"To summarise, bark-ringing eventually causes the death of the upper part of the tree, because the water supply becomes inadequate, either through loss of conductivity in the wood at the level of the wound, or through deficiency of absorption by the roots.

"An interesting example of bark-ringing may be quoted here. A forked Pine tree was chosen by Hartig¶ for an experiment. The tree was 118 years old, and the trunk was forked at 4½ m. above the soil into two approximately equal stems. The bark was peeled off all round one of these stems at about 3 m. above the point of forking. When the tree was felled eighteen years after this ringing operation had been performed, it was seen that the crowns of both stems were still sound, but that the foliage of the ringed stem was thinner and weaker than that of the other stem. It was also found that growth in thickness had practically ceased after ringing on the side of the trunk situated below the ringed branch. The reason for the long-continued life of the ringed stem is that the roots attached to the base of the trunk on the side below the intact stem had received normal nourishment, and therefore, having remained healthy, had been able to supply the trunk with a good supply of water.

"Wood-ringing.—The experiments in wood-ringing made by Strasburger and others** show that, though the inner (older) layers of sap-wood can conduct water for the transpiration current, the heart-wood cannot do so. The first of the following cases serves as an example of a sap-wood tree, the remainder being 'heart-wood trees' (*i.e.*, trees which form heart-wood).

"Two Beech trees 150 years old had trunks 32 cm. in diameter. These were ring-cut to a depth of 8 cm., and the trees still bore foliage a year and a half later.

"The trunk of an Oak fifty years old was ring-cut into the heart-wood, and its foliage withere in a few days. Another Oak of the same age which was cut similarly but not quite throug' the sap-wood, did not wither for some weeks.

"The trunk having been cut to the heart-wood in a tree of Prunus avium, and in a Robinia, wilting of the leaves took place in two days in the first case and in a few hours in the second."

NOTICES OF BOOKS.

Roses in Western India.*

This little book of 45 pages is published by the Agri-Horticultural Society of Western India, and the author is Assistant Economic Botanist and Superintendent of the Ganeshkind Botanical Garden, Kirkee.

A single page is devoted to the history of the Rose, and the author proceeds at once to propagation by cuttings, budding and layering. Cuttings he recommends chiefly for providing stocks. Of these he mentions two, the hardy county pink Rose, commonly called the Edward Rose (Gavti-Gulab), and a variety of climbing habit with more pointed leaves called Velya Gulab. The method of budding is carefully described and illustrated by pictures in the text. The budding season in the Deccan is October to February, and January and February in the Koukan, and as there is no severe winter to supervene there as with us the buds are encouraged, it seems, to grow away at once, the wild growths being suppressed as soon as the bud begins to grow. The author seems to be experimenting in growing several varieties on the same plant, but we fear he is scarcely likely to attain satisfactory results.

Next, the author gives instructions and the routine operations necessary for growing Roses in pots, and this, we gather, is the manner in which they are chiefly cultivated in Bombay. At the same time he points out that when grown in the open ground they require less attention and give better results. He gives the life of a pot plant at eight to fifteen years, which is considerably longer than we usually find we can satisfactorily retain pot plants in this country. Ground culture follows, and here, it would seem, he has local prejudices to combat, having regard to his insistence on choosing an open position away from trees and to his careful advice to eschew damp places. Pruning is treated very shortly and chiefly by two quotations, one from the late Mr. Wm. Paul, and the other from Woodrow's *Gardening in India.* Two pages are given to manures, and, in addition to the ordinary manures, silkworm refuse and tea refuse are strongly recommended. Then follows a chapter on the enemies of the Rose, from which we find that Roses in India suffer from much the same troubles as do those in this country; there is also a calendar of operations for the different months throughout the year.

---

§ Ray, *Hist. Plant.*, t. 1, p. 9.

‖ Any conduction of food-substances that may take place through the wood in the downward direction would be against the transpiration current, and might be expected to be slight. That it is slight or non-existent is suggested by the fact that growth in thickness of the stem practically ceases below the ring gap.

¶ Hartig, *Lehrbuch d. Anat. u. Phys. d. Pflanzen*, p. 2'4.

** Strasburger, "Bau und Verrichtungen der Leitungsbahnen" (*Histolog. Beitrage*, 3, p. 515).

* *A Guide to Rose Culture in the Bombay Presidency.* By G. B. Patwardhan. Price 1 rupee 8.

The last chapter and first Appendix are devoted to classification and lists of Roses. This is perhaps the least satisfactory part of the book. Roses are divided into summer and autumn flowering, which is right enough, but the autumnals are made into two sub-classes—(1) H.P.s, H.T.s and Bourbon Teas with Noisettes; (2), H.T.'s which are crosses between H.P.s and Teas. It is a little difficult to account for this division or to guess what H.T.s can be included in sub-class (1). The lists of Roses are much out of date. No mention is made of the Multifloras, Wichuraianas or Polyantha pompons. The most modern H.T. seems to be Killarney 1898, Tea Lady Roberts 1902, and H.P. Frau Karl Druschki 1900. Again we find La France and Captain Christy, both H.T.s, classed with the hybrid perpetuals; and Killarney H.T.. Kaiserin Augusta Victoria H.T., Maréchal Niel N. and Frau Karl Druschki, Marie Baumann, Jules Margottin, Xavier Olibo and Her Majesty, all H.P.s, placed among the Teas; while among the Chinas no mention is made of Laurette Messimy, Comtesse du Cayla, Mme. E. Resal, Queen Mab, or even Fabvier.

Appendix II. gives two lists, one of Roses that bloom well in the cold season at Poona, and the other of those blooming well in the rainy season, which may doubtless be useful. The book is illustrated by some pretty photographs and a coloured plate of Maréchal Niel which has failed to get the colour of that variety.

THE BULB GARDEN.

IRIS BOISSIERI × TINGITANA.

In the early days of May it was a surprise to find an Iris in flower that appeared to be a fine form of I. Boissieri. On looking up its number I found that so long ago as 1908 I crossed I. Boissieri with pollen of I. tingitana.

The foliage is weak and of a pale yellowish-green colour, which does not augur well for the constitution of the hybrid. However, five or six of the bulbs have flowered and shown little variation. The colour is an intense blue-purple, and the flowers are remarkable for their very flat outline and for the great breadth of the style branches.

The spathes are 3 inches long, keeled on both valves and scarious only at the tip. Each contains only one flower. The tube is slender and more than an inch in length. The blade of the falls is about an inch broad and bears a central line of orange-yellow, on which, however, there is no trace of the hairs which distinguish the seed parent, I. Boissieri. The large standards are of the same shade of blue-purple as the falls and incline outwards, contrasting with the distinctly red-purple of the style branches.

My object in attempting this cross was to see whether the scanty beard of I. Boissieri would remain constant in its offspring. In this first generation there is certainly no trace of the hairs, but I had hoped to obtain seeds from the plants and to raise eventually a second generation. The beard should then have reappeared, if, as is not impossible, the character acts as a Mendelian recessive.

The plants have, however, proved to be sterile, for not one has set any sound seeds, though capsules were formed. This is in accordance with my experience of other hybrids between distinct species of Iris. Sterility seems to be almost, if not entirely, absolute in every case, unless the species are closely allied. For instance, numerous crosses between new Chinese members of the sibirica group, e.g., Forrestii, chrysographes, Bulleyana, have produced hybrids from which I have lately gathered abundant seed, while I. Wilsonii when crossed with the Californian I. tenax gives absolutely sterile hybrids, and another Chino-Californian cross, I. chrysographes × I. Douglasiana, gives the same disappointing result. *W. R. Dykes, Charterhouse.*

The Week's Work.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Bulbous Irises.—Both Spanish and English Irises should be planted now. They grow best in a well cultivated soil of a friable nature, free from fresh manure. The spikes are extremely useful as cut blooms, and the flowers are exceedingly beautiful. The bulbs are not very expensive, and, arranged in a bed of mixed varieties, they give a splendid effect when in flower. Of the English Irises, Mont Blanc, Blue Mourant, and Cassandra, are three excellent varieties, whilst Chrysolora, King of the Blues, and Alexander von Humboldt are three good Spanish Irises.

Iris germanica.—If the Tall-bearded or German Irises were divided as advised in a former calendar and the plants set in the reserve garden, they may be transferred to their permanent situations. These Irises require lime in the soil, and the best form is old mortar rubble. A little superphosphate of lime may also be added at the time of transplanting, for either of these materials will act as a preventive of rot in the rhizome. A dressing of ground lime should also be applied in the autumn or winter, as without lime in the soil leaf-spot is very liable to appear. A selection of varieties includes Jaquiniana, Black Prince, and Madame Chereau.

The Water Garden.—Irises are very suitable plants for the water garden, and one of the most valuable is I. Kaempferi. This species should be planted just above the water-line, but sufficiently near to the pond for the roots to find their way to the water. If the seeds of this species are sown as soon as they are ripe and care is taken to select pods from the best flowers, the seedlings will flower satisfactorily, although they may not be equal to the special named varieties.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Gardenia.—With the exception of a small batch of plants, grown especially for flowering in winter, Gardenias should be resting, and a night temperature of 60° is suitable. Those for blooming shortly should be grown in plenty of bottom heat and a night temperature of 75°. They should also be syringed daily. If mealy bug is present, sponge with soapy water, mixed with a little petroleum—one ounce of paraffin to two gallons of water.

Pandanus Veitchii.—Small or medium sized plants are the most suitable for decorative purposes, and a stock of young plants should be raised each year from cuttings or suckers. The present is a suitable time to insert the shoots, which should be taken from the base of the parent plant, potted in small pots and rooted in a propagating pit. Select growths that possess well coloured leaves, and not of too gross a nature. The old plants must not be watered too liberally in winter, as an excess of moisture may cause damping at the base of the stem.

Primula sinensis.—The earliest plants of Chinese Primulas may be allowed to flower, and they will be benefited by applications of weak soot water or liquid manure. Keep the atmosphere dry and water the roots only when moisture is absolutely necessary, for these plants are very liable to damping. For the same reason ventilate the house whenever the weather is favourable. Primulas may be flowered in a temperature of 55° to 60°. Seeds sown now will furnish plants that will flower well next autumn. The seedlings should be grown on without a check in a temperature of 60°.

Lily-of-the-Valley.—Retarded crowns of Lily-of-the-Valley need not be potted in a rich compost, but they should be kept well damped, covering them with moss or an inverted flower pot until the flower spikes are well developed. Afterwards, air may be admitted gradually, and, when in full bloom, remove the plants to an intermediate house. Once retarded crowns have been thawed they should never be frozen again. The Berlin and ordinary crowns may be plunged in a layer of ashes, and these will benefit by being frozen.

Storing Plants in Winter.—Hydrangeas, Fuchsias, Cassia corymbosa, Cannas, Aloysia citriodora, and similar subjects may be stored under the staging of a greenhouse or in a frost-proof shed. Although very little water is required, the soil must not be allowed to become dust-dry. Tuberous Begonias may be stored in a dry place in a temperature of 55°. The tubers may either remain in the pots or be shaken clear of the old soil and stored in sand.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Peaches and Nectarines.—Prune the trees in the early house, detach the shoots from the wires, and tie them in bundles to permit of cleansing the glass and woodwork. After the cleansing operations, dress the trees with an insecticide, so that everything may be ready for forcing. Loose soil on the border should be removed, but not so deeply as to expose the roots, and replenish with rich, fibrous loam, mixed with bone meal or a concentrated fertiliser. If the soil appears to be sour, basic slag may be used at the rate of 3 or 4 ounces to the square yard, or freshly slaked lime may be lightly forked into the border. In limewashing the walls, add a handful of flowers of sulphur to the wash, as this may prevent mildew in the developing leaves later. When the trees have been trained and the other work completed, keep the house as cool as possible for a week or two, and ventilate freely, unless very early fruits are required. Spray the trees lightly overhead with soft water, about noon, on fine days. After the earliest house has been attended to, the second-early house may be prepared in a similar manner. If the wood is not perfectly ripened in the later houses, use a little fire-heat, but open the ventilators wide, to keep the trees at rest. It is the custom of some to stand pot plants of other subjects on the borders, but this is a mistake, as in watering the pots, the border becomes saturated.

The Cherry House.—Most of the trees in the Cherry house are ready for pruning and training. It is not advisable to use the knife too freely, and if the summer pruning was attended to, there will be very little wood to cut out now. Cover the cut surfaces with styptic to prevent gumming. This is especially necessary where large branches have been removed. Red spider is a great pest of the Cherry under glass, and every part of the tree should be washed well with an insecticide containing sulphur in some form. The following mixture may be recommended, as it will not harm the trees, and will destroy the eggs of the pest:—To four gallons of water add 1 lb. of soft soap, 2 lbs. of flowers of sulphur, and two ounces of common shag tobacco. Work the mixture well into rough bark, and between the buds, by means of a painter's brush.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Coelogyne cristata.—Most of the varieties of C. cristata have completed their growth, and some of the earliest plants are developing flower-scapes. Under favourable conditions, including a pure atmosphere, there is little difficulty in securing satisfactory flowers; but I have on various occasions received flower-scapes of this Orchid from gardeners in the neighbourhood of large towns enquiring why the flowers have turned black and become, in some cases, a black, pulpy mass. Most of these enquirers are amateurs, and they state that to all appearances the plants themselves were in perfect health. In such districts it is rare that C. cristata produces unblemished flowers during December, January and the early part of February unless the plants are retarded. This may be done by placing them in the Odontoglossum house now—or earlier if the growths were matured—until the middle of February. After that time the foggy season is over and the plants may then be brought into heat to develop the blossoms. The variety alba and others which are backward in maturing their growths flower late and their blooms are not usually subjected to this injury. Plants in a cool house require very little moisture at the roots, the atmospheric moisture being almost sufficient to retain the pseudo-bulbs in a plump condition.

Masdevallia tovarensis.— The flower-buds of this Orchid are developing, therefore the plants should be placed in the intermediate house, where the temperature is 58° to 60°. If for any reason it is desired to reduce the number of flower-scapes, do not remove any of the current season, for although the inflorescences only produce twin flowers at first, they will have three, four, or even more in the plant's second season. Water the plants liberally until they pass out of flower, when they should be placed in a cool house and kept drier at the roots.

Cattleya labiata.—This and other late-flowering Orchids should be top-dressed or repotted directly they pass out of flower. The roots are, in many cases, well advanced; therefore guard against injuring them, so that the plants may become re-established quickly. Only sufficient moisture is necessary to keep the leaves and pseudo-bulbs plump and to encourage root-action. It is a good practice to lightly spray the plants overhead when the conditions are favourable.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Raspberries.—November is the best month in which to make new plantations of Raspberries, for the soil is still warm, and there will be time for the roots to make a certain amount of growth before the winter. Moreover, if Raspberries are not planted until the spring it often happens that a large number of them fail, due most probably to the roots having been exposed for a long time. The ground for Raspberries should be dug deeply and well enriched with manure, which should be placed below the reach of the roots, so that they are not in direct contact with it. At the same time take care to remove and burn all perennial weeds, especially Convolvulus or Bindweed. There are various methods of training the canes, and one of the best systems is to tie them to wires, stretched tightly on upright posts. This is better than tying the canes in bundles to stakes, for the air circulates freely amongst the plants, and there is thus less danger of the fruits being spoiled through damping. Another advantage of the wire system is that the fruits may be easily protected from birds, especially if the posts and the top wire are about a foot higher than the canes themselves. Small, well-ripened suckers are the best for planting, as these usually possess plenty of fibrous fruits, whereas larger canes experience a considerable check on transplanting. The ground should be allowed time to settle, and made quite firm before planting is commenced. If the soil is of a very heavy nature a quantity of wood ash or fine light soil from the potting shed should be incorporated with it. The distance between the rows should be from five to six feet, and the plants should be set from two to three feet apart in the rows, according to the system of training to be followed. Superlative is one of the best all-round varieties, and other good sorts are Baumforth's Seedling and Hornet. Of the yellow fruiting kinds, Queen of England, Yellow Antwerp, and The Guinea may be recommended.

Autumn-fruiting Raspberries.— Autumn-fruiting Raspberries provide useful berries after the ordinary Raspberries are over; at the beginning of the present month the canes were still yielding a supply of fruit. The plants should be grown in a warm, open situation. The fruits are borne on shoots of the current season, therefore plenty of new canes should be encouraged to develop, and afterwards thinned to a reasonable number early in the season. Belle de Fontaineau, Abundance, and Queen Alexandra are three good varieties.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Mushrooms.—Mushrooms are often grown in such ill-ventilated, moisture-saturated houses that it is not surprising that other fungi of a deleterious nature appear in the beds. If a layer of straw is spread over the surface, it will keep the soil moist and thus obviate frequent waterings, and, moreover, it will help to conserve the heat of the bed. It is quite possible to grow Mushrooms in manure which is very far from being fresh. I have to use what seems to be very imperfect material, yet with good spawn I always manage to grow satisfactory crops.

Lettuces.—Severe frost may be expected at any time, and the plants in frames should be protected from both frost and rains, but it is only necessary to place the lights in position at such times. Should mildew appear on the leaves, dust them lightly with flowers of sulphur, and whiten the soil with quicklime. Stir the surface of the ground occasionally, and remove every portion of foliage that has turned yellow. There is still time to plant half-grown Lettuces, especially of Cabbage varieties, in cold pits. The plants will be very valuable in March, even if they do not form much heart. Treat them in winter so that there will be no need to water the roots. Stir the ground between the plants that were set out in October, and sprinkle it with lime as a deterrent to slugs.

Celery.—The latest plants should be earthed finally, and the work should be done when the leaves are dry. Make the soil very fine before it is arranged about the stems, and press it firmly as the work proceeds. Take care to leave the top foliage clear of the soil.

"Seed" Potatos.—Our "seed" Potatos for next year show a large percentage of diseased tubers. It is remarkable that, notwithstanding the dry season, Potato disease has been very prevalent in this district. Baronet has again proved of exceptionally good quality and the tubers have been free from disease. Aron Chief yielded an enormous crop, but with much disease. King George V. again proved a satisfactory mid-season variety, and the tubers were of good flavour. Equal in flavour to Baronet and Golden Wonder, a variety which I regard as the standard of a good Potato, is a late kidney Potato sent to me by Mr. Joseph Oliver, for a long time gardener at Eslington Park, Northumberland. I do not know whether it has a name, but we call it Oliver's Kidney. The tubers were scarcely affected by disease, and none of those reserved for seed was affected.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Nursery Beds.—The work of transplanting Lettuce seedlings has been completed, and the earliest opportunity should be taken to make good any blanks in the rows. Guard against slugs attacking the plants, examining the bell glasses every morning for the purpose. In open situations and in gardens in the northern districts a sowing of either White Passion or All the Year Round Lettuce may be made now. The seed-bed may be formed in a cold frame in a sheltered position or in a cold greenhouse. Sow the seed very thinly, for it is essential that the seedlings are not drawn, as only robust plants will withstand the cold of April. The plants will be ready a week earlier than those raised in January in hotbeds, an advantage worth considering for May and June planting.

Old Manure Beds.—The crops having been cleared from the beds, cart away the material of the outside paths for manuring purposes, or to make an addition to the black soil heap. Dig the ground with a long-pronged fork, leaving it rough on the surface. After about ten or twelve days turn it over again and make the surface finer. At this second digging the workman should stand on planks.

Crops in the Open.—As the crops are removed, prepare the ground for spring cropping. Dress it with lime and dig in a thick layer of manure, leaving the surface rough for the winter. All kinds of vegetable rubbish should be collected in a heap, and the latter turned occasionally. When decayed it will form an excellent stimulant for such crops as Cabbages of all kinds, Leeks, and Marrows. If lime is added to the heap the material will be additionally useful.

"Botanical Magazine."—The issue for November contains illustrations and descriptions of the following plants:—

Coelogyne brachyptera, tab. 8,582.—This Orchid was first described by Professor Reichenbach in *Gardeners' Chronicle*, July 2, 1861, p. 6, from a plant imported by Messrs. Hugh Low and Co. from Burma. The species was lost sight of for a long time, but a specimen was included in a small collection of Orchids from Tenasserim, presented to Kew in 1910 by Mr. H. Tilly. The plant was considered to be C. lentiginosa until it flowered in May last. It differs from C. Parishii in the orange-coloured disc and numerous elongated processes. The floral segments are greenish-yellow.

Echinocactus minusculus, tab. 8,583.—This small species of Echinocactus has the appearance of a good plant for gardens, for it develops numerous showy crimson flowers, and is, moreover, easy of culture, growing well in a mixture of turfy loam, sand and mortar rubble in a sunny greenhouse. But the flowers do not last long. Seeds ripen in abundance and offer a ready means of propagation. Like E. Fiebrigii, the flowers are produced from the base instead of the upper part of the plant, a distinguishing character of the two species.

Nothofagus Cunninghamii, tab. 8,584.—The Tasmanian Myrtle-tree forms much of the evergreen forest of Tasmania, where it grows on mountains up to 4,000 feet. The species is not hardy in this country except in very mild districts. There is a tree at Fota, near Queenstown, nearly 50 feet high, and it is believed to have been planted nearly half a century. There is a small specimen in the Temperate House at Kew.

Lonicera fragrantissima, tab. 8,585.—This is a well-known garden plant, and was figured and described in *Gardeners' Chronicle*, January 26, 1879, p. 107. It is one of Robert Fortune's introductions from China whilst plant collecting on behalf of the Royal Horticultural Society. L. fragrantissima is often confounded with L. Standishii, which is more precocious in flowering, possesses hairy branches and leaves, the latter being narrower and more pointed, and has soft hairs on the exterior of the corolla-tube. The flowers are produced in the leaf axis and are white.

Primula vittata.—This species was described and illustrated in *Gardeners' Chronicle*, June 24, 1905, p. 390, and September 22, 1906, p. 209. The flowers are purple like those of P. secundiflora, and the two species are so alike as to be easily confused, but in P. vittata the leaves are erect and elongated, whilst in P. secundiflora they are horizontal and oblong-elliptic.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS FOR THE ENSUING WEEK.

[In the following list of Appointments we have omitted the Chrysanthemum Shows which we have reason to know have been abandoned. It is possible that some of those enumerated may not be held, although we have no information to this effect.]

MONDAY, NOVEMBER 16—
Nat. Chrys. Soc. Floral Com. meet.

TUESDAY, NOVEMBER 17—
Roy. Hort. Soc. Coms. meet. (Lecture at 3 p.m. on "Carnations in Pots.")

WEDNESDAY, NOVEMBER 18—
Liverpool Chrys. Sh. Newcastle and District Chrys. Soc. Sh. (2 days). Bristol Chrys. Sh. (2 days).

THURSDAY, NOVEMBER 19—
Scottish Hort. Assoc. Chrys. Sh. (3 days).

FRIDAY, NOVEMBER 20—
Bolton Hort. and Chrys. Soc. Sh. (2 days). Aberdeen Chrys. Soc. Sh. (2 days). Edinburgh Bot. Garden Guild An. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 42.5.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, November 11 (6 p.m.) : 54°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London ; *Thursday*, November 12 (10 a.m.) : Bar. 29.4 ; Temp. 47°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Fruit Trees, etc., at Messrs. J. Veitch and Sons' Nurseries, Feltham, by Protheroe and Morris, at 12.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Bulbs, etc., at Stevens' Rooms, 38, King Street, Covent Garden.

WEDNESDAY—
Japanese Liliums (at 3), Bulbs in Trade Lots (at 1), by Protheroe and Morris.

THURSDAY—
Roses, by Protheroe and Morris, at 1.

FRIDAY—
Hardy Herbaceous and Border Plants, Roses, Fruit Trees, etc., by Protheroe and Morris, at 12.30.

Greenhouse Construction.

The marked American gift for contriving improvements and for cheapening cost of production is illustrated on all sides, but nowhere more strikingly than in greenhouse construction. Hence horticulturists in all English-speaking countries are indebted to Mr. S. C. Johnston for his careful and thorough account of greenhouse construction as adopted by some hundreds of the leading growers in America. Recognising that "the production of vegetables under glass . . . . is rapidly becoming one of the important branches of agriculture, the Ontario Department of Agriculture, at the request of the Ontario Vegetable Growers' Association, despatched Mr. Johnston on a tour of inspection.*

As is to be expected from so practical a people, American growers pay careful attention to the site and location of their glasshouses, and endeavour to secure that a railway siding brings fuel to the range and that the trucks unload direct into the coal-hoppers or bins. Heaps outside the boiler-house and haulage by wheelbarrows are things and practices of the past. So, also, American growers see to it that their houses not only have access to good roads, but also are, wherever possible, linked up by sidings with the electric railways. Other considerations of prime importance are that the site should not be low, lest trouble from flooding ensue, and that it should be sheltered from prevailing winds, and hence protected from excessive coal consumption.

Mr. Johnston's experience leads him to advocate the best modes of construction as being the cheapest in the long run. For example, he recommends an 8-in. concrete foundation deep enough to provide a sound base. The walls are, as a rule, built not more than 2ft. high, but sometimes 1ft., sometimes 3ft., and the material which is growing in favour is some form of concrete, either solid or in blocks. About every 10ft. openings are left, in order to facilitate handling of Rhubarb roots, manure, and soil, the openings being closed by well-fitting doors. Drainage, to prevent frost action, consists of 2-2½in. tile set at the base of the foundation 1ft. away from the wall on the outside, and the drains are provided with a good outlet. The height of the eaves is a subject of controversy and varies in different localities. Very commonly they are from 6 to 7ft. in the large commercial houses.

Again, the direction of the ridge is a subject of dispute, and the old rule of N—S, practised when sash bars were heavy and close together, is set at naught by many experienced growers who run their light iron-built houses east and west.

The old-fashioned narrow houses have been discarded for those with a wide span, and this change Mr. Johnston defends on the ground that the narrow house was devised on the mistaken idea "that plants should be located as near the glass as possible." It looks as though the earlier race of American growers were following a tradition sanctioned by experience in Western Europe, but which in the more luminous region of America does not hold.

The advantages of the wide span, with necessarily higher eaves, are that the volume of air and the surface of glass are increased, and the working costs lessened.

"What greenhouse men require for successful growing is more air." Given plenty of air, the plants grow better at every stage. The increased glass-surface means more light and easier ventilation. Also, with the higher eaves the ventilation apparatus is more easily placed and operated, and economises space. As to width of house, builders have different views, but the width generally adopted is 75ft., and it is to be observed that as soon as a grower tries this width he is eager to discard his narrower houses of 25 or 40ft. The smaller man, who cannot afford a proportionate length, must be content to begin with a house narrower than 75ft. Needless to say, the heating cost of one wide house is lower than that of two narrow houses of similar other dimensions.

The form of construction which is growing in favour is the "iron frame." In this form all possible parts are constructed in iron. Supporting members for eaves consist in flat iron parts bolted together and set in concrete. Flat iron rafters run from the wall supports to the ridge, and are held together with angle iron purlins. The sash bars are in wood and are attached to the iron framework. A house 75ft. wide only requires two lines of supports with braces and struts.

The iron frame houses are manufactured in separate pieces in foundries, and all the parts are tested, labelled, and sent out ready for putting together in sections.

The initial cost of these houses is high, but their durability makes ample compensation; after thirty years they are thoroughly usable. High wind does not set up vibration of the glass, and the cost of heating is less than in the older types. Mr. Johnston thus summarises the merits of the iron frame house: Low cost of upkeep, long-lasting, economical of fuel, little breakage of glass, increased space owing to lack of columns, maximum amount of light.

A cheaper type of house is that built on the pipe frame system, in which galvanised iron pipe is used instead of solid iron. The all-wood construction is now regarded as out of date. Much attention is paid to ventilation, and the usual practice in the large houses is to place ventilators on both sides of the house in continuous run, and in both sides of the ridge in continuous or in broken alternate runs. Gable-end ventilators are also used by certain progressive growers.

Great importance is attached to a plentiful side ventilation, and the side ventilators are often continuous, but in other cases about half this ventilation space is provided by making ventilators alternate with equal sized surfaces of fixed glass. The side ventilators either open directly beneath the eave plate or from a header set right below the eave.

With the adoption of the 75ft. wide house the older custom of building a range of joined houses is being discarded, and the houses are built separately. It is claimed that this practice has the advantages of providing ample side ventilation, of permitting the maintenance of different temperatures in the different houses, allowing of the complete shutting off of the heat from one or more houses, and reducing the spread of disease from house to house. An alley or corridor is generally built connecting the different houses, thereby facilitating the carrying of supplies; through it the heating main runs.

Permanent paths are not laid down in the houses except where raised benches are used. The object is the intensive cultivation of the soil, and often horse labour is used to cultivate the soil under glass, hence only narrow rows of trodden soil or narrow boards are left; or sometimes concrete walks of 12-15in. run along either side of a line of purlin supports, or along other convenient lines. Before installing the heating system the grower decides whether he means to use beds or benches. With the rejection of the "near-to-the-glass" theory Lettuce, Tomatos, and Cucumbers are grown in the soil. The advantage is that in the large houses (75 by 200 feet) ploughing, harrowing, discing and spreading of manures, fertilisers, and lime may be all done by horse-labour. On the other hand, in smaller houses, with more mixed culture, raised benches are often used with success. The height of the benches varies from 2½ to so much as 4 feet. Three feet is a good height, and to get the best results a heating pipe is laid under the bench. For forcing Rhubarb and for Mushroom-growing the raised benches offer advantages, particularly to the small grower. On the other hand, their use entails higher initial cost and upkeep, more trouble in cultivation, and waste of space for paths. The benches referred to by Mr. Johnston are made of wood, and he does not speak of the concrete benches or troughs used in Canada and the United States for the planting of Carnations and Roses.

---

* See Bulletin 224, September, 1914, Ontario Department of Agriculture.

Connected with the greenhouse is the workroom, in which the crop is handled. It should be central, and is usually placed near the outer house, and should be roomy, light and airy.

Much attention is paid to the kind of glass used in the houses. It should be strong, without flaws, and even of edge. The size most popular is 16 x 24, laid sometimes one way, sometimes the other. In the States the glass is lapped, the lap being 3-16 or ¼ inch. It is bedded in putty. In Canada the glass is butted one light against the next one, up a wooden strap which fits on the bar, is screwed on, and no putty is used. In the former system, only best putty is used, for nothing is so costly in greenhouse construction as is cheap putty. The sources of heat are hot water and steam, and which is the better is hard to say. The hot-water heating is one of two systems, the gravity and the pressure system. The former is open to the objection that the water cannot be carried with sure success over 150 feet coil away from the boiler.

Steam appears to be best for large houses or long ranges. Of the two alternatives the low-pressure system is most used. It operates at a pressure of 1-10 lbs., usually 5-6. It works by gravity, and the condensation is carried back to the boiler without a circulator of any kind. In it the boiler must be several feet below the lowest return. By the addition of a steam trap, however, the water may be lifted from the returns into the boiler, and thus the pitting of the boiler may be dispensed with. In the high-pressure system over 10 lbs. of pressure is carried at the boiler. A yet newer mode of heating is a vacuum system, which works on the principle of high pressure at the boiler. By use of reducing valves and vacuum pumps the steam passes through the coils in the houses at or below atmospheric pressure.

War Items.—A barrel of Apples was sold on behalf of the Belgian Relief Fund by Messrs. A. G. Watson, Ltd., fruit salesmen, Aberdeen. It was bought for £2 and sold and resold until £18 15s. was obtained. A case of Apples was also sold at the same sale for a similar object and realised £1 5s.

—— The sale of a basket of fruit, contributed by Messrs. Malcolm Campbell, Ltd., Glasgow, and organised by several of the Glasgow fruit brokers, realised the handsome sum of £550. The object was to provide a motor ambulance for the Army, and with the proceeds of another sale which realised £170 the ambulance will be purchased. The maximum single bid was £1 1s., and the final purchasers were Messrs. J. and A. Ferguson, fruiterers, Union Street, Glasgow, who paid 160 guineas for the basket.

—— I wish first to express our warmest thanks for the sympathy you show to the horticulturists of our country in these tragic circumstances. The severe combats in which the Allies are engaged daily, for the cause of civilisation and in defence of our liberties, are destined to cement more firmly than ever the bonds of fraternity which already exist between the French horticulturists and their colleagues in Great Britain, in Belgium and in Russia. May universal solidarity be the outcome of this struggle, unprecedented in history. Your idea to publish in your esteemed journal news concerning the fate of French horticulturists and their plants is certainly excellent, and I am strongly in favour of it. The only thing is, that we only possess at present very brief information on the subject. When we are in a position to know in detail the ravages caused among horticultural

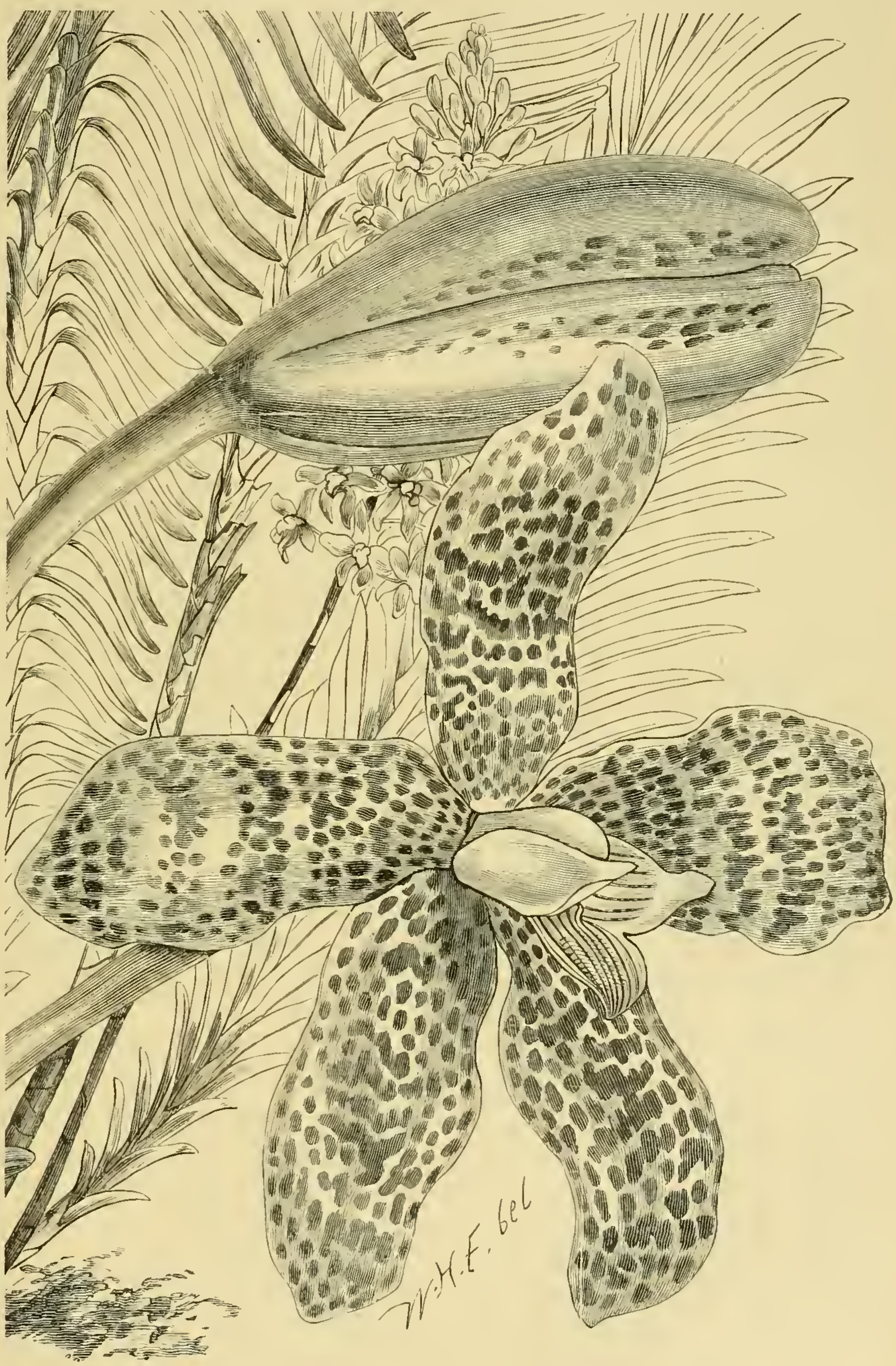


Fig. 129.—Grammatophyllum speciosum.
(See "Kew Notes," p. 327.)

undertakings I will be sure to bear your proposition in mind, and to put you in possession of the facts as completely as possible. We have already examined the possibility of making an appeal to all the members of our profession in favour of those of their colleagues who have suffered most, but here again it will be better to wait, if we wish the appeal to be successful and the subscriptions obtained to be employed in the best manner. In short, I am very pleased to exchange with you ideas of such a nature, and to see how entirely the English horticulturists and those of my country are of one mind. *Abel Chatenay, First Vice-President, Société Nationale d'Horticulture de France.*

The Roll of Honour.—We regret that the name of Lieut. C. J. A. Cowan, of the Royal Scots, was included in our Roll of Honour on page 310. We are glad to state that, although it was officially announced that Lieut. C. J. A. Cowan had been killed in action, it is known that he was alive and well up to November 4.

A Gardener as Musical Composer.—Mr. Edward Nowell, gardener at Weeting Hall, Brandon, Norfolk, sends us copies of three patriotic songs written and composed by himself. The titles are "Under the British Flag," "A Hero of the King," and "Soldiers of the Empire"; the two former were published at 3s. and the last at 4s. Mr. Nowell informs us that he has three hundred copies of "A Hero of the King," and that he will be pleased to forward a copy to any gardener for 1s. 1d., post free, the whole of the money to go in aid of the Prince of Wales's Fund. He has fifty copies each of the other two songs, which may be obtained at the same price. It is interesting to know that the gardening ranks include at least one musical composer. and our readers may be glad to obtain copies in order to see how far their colleague has succeeded in giving to his songs a popular and patriotic tone, or even to obtain an alternative to "Tipperary"!

The Belgian Fruit Industry.—Prior to the devastating war with Germany, the fruit orchard area in Belgium was being rapidly extended, recent statistics showing, according to the *Journal of the Royal Society of Arts*, 179,710 acres, mainly devoted to Apples, Pears, Cherries, and Plums, or an increase of 66,210 acres since the year 1896. Liége province had 42,860 acres, followed by the province of Hainaut with 36,850 acres, province of Limbourg with 21,000 acres, West Flanders 19,900 acres, Brabant 18,500 acres, East Flanders 18,150 acres, Namur 14,350 acres, Luxembourg 6,250 acres, Antwerp 1,850 acres. The Germans in normal times are heavy buyers of Belgian fruit, purchasing the crops of entire orchards on the tree, while immense quantities of Apples are shipped across the German frontier from the provinces of Liége, Limbourg, Namur, and Luxembourg. English fruit buyers, principally the manufacturers of marmalades and preserves, purchase largely from the province of Flanders and the region of Tournai. The Cherry markets of Looz, St. Trond, and Tongres are well known, and during the season the traffic in this class of fruit becomes so heavy that the Government transport agencies, under the control of the Department of the Post Office, are obliged to increase their forces in order to cope with it. Thus, in spite of the relatively limited area available, Belgium is steadily becoming more important as an agricultural country, and the farm products, particularly orchard fruits, are more and more in demand for export. Of late years, however, instead of selling its supplies of fruit to foreign canning establishments, Belgium has developed to a large extent the canning industry at home. so it is probable that in future the demand for orchard fruits in that country for canning purposes will exceed the supply, causing a still greater advance in prices.

The Annual Report of the Horticulture Branch.—The second annual report of the Horticulture Branch of the Board of Agriculture consists of 78 pages. Of these 73 are devoted to pests and matters relating thereto, and five to other branches of horticulture. Among the pests treated of are American Gooseberry mildew, wart disease of Potatos, the large Larch sawfly, and Isle of Wight bee disease.

Proposed Dahlia Society in U.S.A.—There is a proposal to start a special Dahlia Society in the United States, where the flower is grown very largely, and has great commercial value. The object of the Society is to "make known the best of every variety, to fix types, to straighten out nomenclature, to make known the pick of the new varieties, to award certificates, to discard all varieties which do not come up to the type fixed, and, above all, to make public the cultural necessities for the various sections of the country."

A New White Rose.—At a recent meeting of the New York Florists' Club, a white sport of Rose Mrs. George Shawyer, shown by Mr. C. H. Totty, of Madison, New Jersey, was awarded a preliminary certificate. It is said to have the long-pointed bud of Mrs. George Shawyer, possesses fragrance, and whiter petals than White Killarney.

Trinidad.—We note in the *Trinidad Royal Gazette*, of October 22 last, that his Excellency the Governor "has appointed Mr. W. E. Broadway to be Horticulturist and Assistant Botanist" in the Department of Agriculture, Trinidad, with headquarters at Port of Spain.

America and the Potash Supply.—A start has been made at Searles Lake, California, with the manufacture of potash for commercial purposes, and although the present output is only five tons a day, it is hoped ultimately that the plant will complete 120 tons a day, or, roughly, 37,500 tons per year. Statistics show that America imported 237,453 tons of potash from Germany in 1911, and in subsequent years the imports have been even greater.

Nurseryman Heads the Poll.—Mr. Ebenezer Douglas, nurseryman, headed the poll at the recent election of members of the Town Council of Annan. He was appointed Junior Bailie at the first meeting of the Council.

Edinburgh Fruit and Vegetable Market.—The Old Gasworks Site.—Mr. David King, President of the Edinburgh Market Gardeners' Association, in a letter contributed to the *Scotsman*, makes the following remarks on this subject: "No business man would shift his premises to a worse situation simply because he was to have more accommodation. We can all put up with many troubles when we know we are in the best position for business. Those who sell in the Market know that if the proposed new one were built, and the large wholesale fruit merchants in Market Street remained where they are, much more business would be done there and less in the Market. Those who most favour the change do not use the present Market, and in my opinion have small chance to use the new one. Anyone who expects the large trade done in Leith to be drawn into that Market is mistaken. Goods bought there are railed on to Glasgow and elsewhere direct. Everything nowadays tends to as quick dispatch from grower or supplier to consumer as possible. The fewer middlemen and time and expense wasted the better. So, too, the vegetables grown so largely in Mid and East Lothian, which used to pass through our Market, are now put on rail direct to Glasgow and other large centres of population. This trade can never again come back to Edinburgh, no matter where the Market is situated. As for an all-day Market, the Edinburgh public do not take on to that sort of thing, and seem to prefer the well-appointed shops all over the city. The scheme was tried in our present situation, and failed. In my opinion it is not so much the wish to give us a new Market as to get us out of the present one. That is the secret of all the trouble, but my advice to the ratepayers is, don't have it. I assure you it would be the biggest white elephant the city ever tackled, and a pretty expensive one, too. We are not stupid enough, however, not to know that a spacious new Market, with all the wholesale concerns under one roof, and in a good situation, would be a good thing, our sole objection to the gasworks site being its inconvenient position. Our Town Council have at present on hand some changes at Fountainbridge, and may I suggest that if they thought of building a fine new Market on the site of the Canal Basin, and taking in Semple Street, then we would have something worth considering. It is only some fifty yards from the Caledonian Railway, and a very little more from the North British Railway. Both could be tunnelled into this site, with hoists to the Market level. This, with tramways to all parts of the city and a fairly central situation, seems a commendable proposal."

Chatsworth Seventy Years Ago.—The works at this seat of magnificence are proceeding with unabated activity. During the summer two new fountains have been set in action, of which one. called the Emperor, from a single jet throws a column of water nearly 300 feet high. The force of this fountain may be imagined when we state that in an hour it lowers an acre of water to the depth of a foot. The other, quite unique in design, consists of several jets, whose copious streams rise and fall alternately, producing the appearance of dancing water, and an effect perfectly enchanting. In addition to these, huge masses of rock are being collected and formed into a rockwork, the like of which has never before been seen. Some of these masses weigh upwards of 370 tons. In one place they are put together in exact imitation of the Strid—a rocky stream at Bolton Abbey—and when completed will form a wild mountain torrent some 300 feet long with banks full 13 feet high. Such gigantic works are necessary at Chatsworth, where smaller things would be lost amidst the grandeur of the place. The great conservatory now contains some most beautiful specimens of Zamias, which find themselves in better quarters than if they were at home, and Ficus repens has almost covered a mass of rockwork with a tropical screen; Bougainvillea spectabilis was in flower, too, upon the roof, the first time, we believe, that its beautiful heads of rose-coloured blooms have been produced in England. Those who would know what Fuchsia corymbiflora may be should visit the gardens near Mr. Paxton's residence. They will there find it with a strong stem 10 feet high, from the top of which spreads an umbrella of branches, each of which is terminated by long clusters of its beautiful crimson flowers. In the same part of the grounds will be found the Orchidaceous house, crowded with plants in rude health, and tastefully arranged with trunks of trees, so as to resemble an old grove; and near them a most singular unknown succulent coral-like leafless plant, covered with beautiful specimens of a golden Lichen, which appears to be Dufourea flammea. This curious specimen, which has not been recognised as yet by any botanist, was sent to his Grace the Duke of Devonshire from one of the most arid parts of the west of Tropical Africa. *Gardeners' Chronicle, November 2, 1844.*

Publications Received.—***Annals of the Missouri Botanical Garden.*** Vol. 1, No. 3. (St. Louis, Mo.: The Rumford Press, Concord, N.H.) Price $1.00.—***Experiments in the Destruction of Fly Larvae in Horse Manure; The Sequoia Pitch Moth; The Temperature of the Bee Colony.*** Bulletins issued by the United States Department of Agriculture. (Washington, D.C.: The Superintendent of Documents, Government Printing Office.) Price 10 cents each.—***Farm Accounts.*** By C. S. Orwin. (Cambridge University Press.) Price 3s. net.—***Hints on Growing the Wheat Crop of 1915.*** (The Board of Agriculture and Fisheries. Special leaflet, No. 7.)

KEW NOTES.

In the glasshouses, Royal Gardens, Kew, many exotics are in bloom. Grammatophyllum speciosum, the Giant Orchid (see fig. 129) is in flower in the Water-Lily house of the T range, and alongside it, on a stage, the curious Aroid, Dracontium gigas, is unfolding its foetid bloom, which, with the stalk, is nearly 3 feet long. The single leaf of the Aroid towers 10 feet above the pot, the petiole being most elegantly mottled with grey, but the mottling of the flower-stalks bearing the livid spathe is even more beautiful. The plant of Grammatophyllum speciosum is bearing only a single spike this season, about 8 feet in length with fifty blooms. The flowers at the base of the spike are male, these having only four segments and no lip. The colour of the petals and sepals is yellow blotched with chocolate-brown. Messrs. Sander and Sons presented the plant to Kew after exhibition at the Columbian Exposition at Chicago in 1893. When it flowered first in 1901 the blooms only opened in mid-winter, consequently they failed to develop perfectly. Just by the Grammatophyllum in one corner of the pool is a batch of Pontederia speciosa, and the plants have flowered splendidly this summer. The blooms are very pretty, being shades of pale blue, but they only last for a short time. In the centre of the pool Nymphaea gigantea var. Hudsoniana (see coloured plate in *Gardeners' Chronicle* for June 21, 1913) takes the place of the Victoria Regia. The plants have produced a profusion of their beautiful blue flowers all through the summer. In the stovehouse adjoining, a Gloriosa trained from the roof-rafters is in bloom; and another beautiful climber in flower is Solanum Seaforthianum, with trusses of mauve-blue flowers and prominent golden stamens. In this house various Aphelandras have contributed a fine display, and just now A. tetragona is bearing its spike of deep coral-pink flowers prettily arranged in a four-faced inflorescence. A. squarrosa var. Leopoldii has big yellow bracts subtending the yellow flowers. A. aurantiaca is a suitable plant for growing in small pots in a very warm house, the spike of orange-scarlet flowers being exceedingly bright.

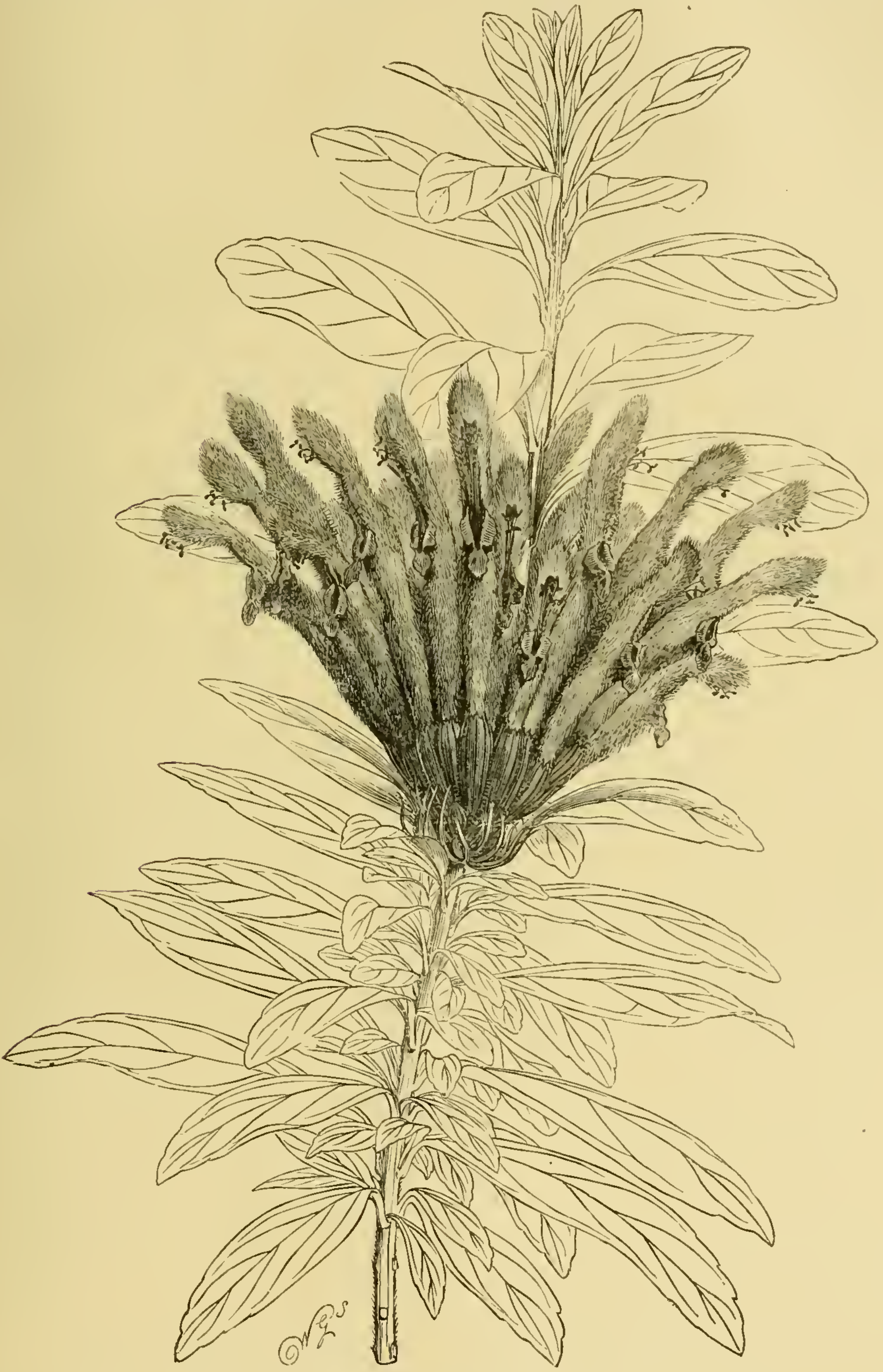


Fig. 130.—Leonotis leonurus: flowers orange-scarlet.
(See "Kew Notes.")

In the Palm house a plant of Furcraea cubensis var. inermis is in bloom. The tall, candelabra-like spike towers 25 feet high, bearing at the top a profusion of small, greenish-yellow blossoms. We have never seen the Cycads in finer condition. Encephalartos Altensteinii is the most conspicuous plant, and Dioon spinulosum, although not so large, is equally beautiful.

In the Mexican division of the Temperate house Hibiscus Waimeae has been in flower for some time. The plant is some 20 feet tall; the blooms are white, about 6 inches across, a conspicuous column of red stamens with golden anthers protruding for 5 or 6 inches. The plant of Citrus Medica var. Limonum, Metford's Lemon, is bearing ten fruits, each as large as a Melon. Hybrid Hedychiums are in bloom in this house, including H. kewensis, also several beautiful Javanese hybrid Rhododendrons.

No. 4 greenhouse contains a great wealth of flowers. Groups of Chrysanthemums are arranged in the beds, two conspicuous varieties being Florrie Robinson, white, and Sylvia Slade, crimson with a zone of white around the prominent golden disc, both singles. Varieties of winter-flowering Begonias are very beautiful on the stages, which are also furnished with Nerines, Bouvardias, Antirrhinums, Leonotis leonurus (see fig. 130), and the fine Melvillei variety of Solanum Capsicastrum, the berries of which are pointed and produced with great freedom. Interesting climbers in bloom are Abutilon Golden Fleece and Bomaria patacocensis, which bears clusters of red tubular flowers with blue anthers. The showiest plant is Tibouchina semidecandra (syn. Pleroma macrantha), which covers one of the gable-ends and is smothered with big purple blossoms; its congener, P. heterophylla, growing in the border, is also in bloom. This latter plant forms a small bush; the flowers are purple, but much smaller in size, though they have a strong family likeness to those of the other species.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Picea ajanensis.—Mr. E. H. Wilson's note (see p. 309) about this beautiful tree, as he saw it, in Hokkaido, deserves attention from British planters, especially on our western seaboard, where Norway Spruce seldom can do itself justice. I planted out 100 P. ajanensis ten years ago; they are now 18 to 20 feet high, and evidently agreeing so well with our soil and climate that we have raised a large number from seed supplied by M. Rafn, of Copenhagen. As the timber is reported to be equal in quality to that of Norway Spruce, the economic value of this tree promises to be considerable: while as a decorative subject its only rivals in the genus are P. morinda, orientalis, and Breweriana. *Herbert Maxwell, Monreith.*

Potato Carisbrooke Castle.—This new Potato of Messrs. Sutton and Sons is regarded as a first early variety, but it is also one of the best main croppers for winter use. I know of none to equal its cooking qualities at this season; the flesh is mealy and white, with a pleasant nutty flavour, and it has all the other qualities that go to make a first-class Potato. The tubers have but few eyes, which are in a shallow depression, so that there is little waste in paring. I strongly recommend growers to give a trial to this splendid variety. *E. Molyneux.*

Employment of Belgians.—I make bold to write you a letter on the above subject, because I am sure that it deserves a great deal of attention. I have read with interest the letters in your issue for October 31, 1914, which contain many valuable suggestions, and I should like to re-emphasise that I am perfectly certain that all Belgian refugees who can work would work, and work hard, if employment was given them. Much is, I am sure, being done by suggestions and letters in the general as well as the horticultural Press, but the need is an urgent one—something could be done now, and ought to be done now, to get them employment before the winter is upon us with all its force, else our worthy visitors may have to be dependent upon charity all the winter. Now there are limits to all charity. Our poorer people cannot go on indefinitely helping to keep Belgian families as well as their own. It has been suggested that the Belgians should be taken on as farm hands and as gardeners. This is very plausible, and if there are vacancies in such situations over and above what can be filled with our own men who are out of work, I say fill them with Belgians by all means. But it must not be forgotten that there are many amateurs who employ jobbing gardeners in a small way, and that these, despite all, have been obliged to get rid of their gardeners because they cannot afford to keep them. I urge these amateurs to keep on their gardeners—many unable to go to the front—if they can, or, if they have to give them notice, to do all they can to get them another job. But jobs, though not scarce, or not very scarce, are difficult to get, for the simple reason that so many are trying to get them. I thus urge that we should think of our own men first—those who, owing to dependent families, or other reasons, cannot go to the front—and then, when our own men are working away, fill up with Belgians. It is not selfish to do this, for our English housewife is better able to afford to keep on Belgian refugees if her husband is earning his twenty to fifty shillings a week. As regards employment for the Belgians, I hope you will permit me to add a little suggestion or two. To fill vacancies in the staff of gardens and on farms has already been recommended by previous correspondents, and many other suggestions of noteworthy interest have been made. But as long as they can pick up a sufficient quantity of English (for all our overseers by no means speak French, much less Flemish), I do not see why they should not be employed for labour in towns. More than a few workmen of every kind and class have gone to the front, and I think these Belgian refugees might be well employed by the towns generally to do town work. I expect most of them can dig, among their other accomplishments, so why should they not be employed for the time for laying drains, water-pipes, etc., in the rapidly extending suburbs of our big towns and cities? In parts of England, especially bordering on the moors of Yorkshire and Derbyshire, there are tracts of waste land—not moorland proper, but wide areas crowded with stunted grass and boulders of all sizes and shapes. Such land never will, and never has, grown anything worth much in this state, but why should not some of the Belgians be set on to it to remove the stones and plough it up, or, if it will not plough, to dig it over? If such land is on peaty soil, lime will reduce it to a nicer condition, and scrapings from the country lanes and roads could be mixed in. Townsmen are spending much money to try to find employment for the Belgians, so why should they not spend it, or part of it, in this way, and get at least a little return for the money next year? *E. T. Ellis, Weetwood, Ecclesall, Sheffield.*

Eucalyptus Globulus flowering in the Open (see p. 267).—In Devon and Cornwall well-grown plants of the Blue Gum are not uncommon in small roadside gardens. In the gardens at Lympstone House, the residence of A. Lythall, Esq., is a fine, well-grown tree, of which Mr. Knibb, the gardener, has furnished me with the following particulars. It was raised from seed sown in 1905 and planted in the open, in clayey soil, in 1906. The tree is 50 feet high. Last year was the first occasion of its flowering, when it bore a fine branch measuring about 2 feet in length by 2½ feet in diameter, bearing fully two dozen flowers, the numerous tassel-like stamens remaining for a long time after the operculum or lid had fallen off. The fruits were well formed, measuring each about 1 inch long and ¾ inch in diameter. These I have kept, and on cutting one or two of them across quite recently I found the cells highly charged with a thick resinous oil, composed apparently of the kino which is abundant in some species, and the oil which is also abundant in others. The characteristic smell of Eucalyptus oil was also present in a powerful degree. The cells which should have contained the seeds were well formed, but the seeds were all abortive. *John R. Jackson, Lympstone, Devonshire.*

The Colouring of Apples (see p. 298).—*Southern Grower* states that his Apples have coloured remarkably well this season, notwithstanding the dry, hot summer. With me Apples have coloured well also, which I attribute to the almost continuous rains of July and the early part of August, coupled with the bright sun of September and the early part of October. During the month of July rain fell on eighteen days to a total depth of 4 inches. In the first nine days of August rain was registered on each day; of the remaining twenty-two days rain fell on only five days. In September there were only seven wet days, whilst the first nine days in October were brilliantly fine and hot. In British Columbia I am informed that not a drop of rain falls for a long period at the time when Apples are colouring. At that time, and previously, especially when the Apples are swelling, irrigation is practised largely, and with the brilliant sun the colouring of the fruit is assured. I have noticed for some years past that under similar weather conditions to that described the Apples have invariably been well coloured. *E. M.*

A Visit to Kew.—It is not often we have occasion to complain about Kew Gardens, but I do think something should be said about the way in which visitors were treated yesterday (Friday). I went down especially from town, and on my arrival there found a notice to the effect that all the greenhouses were closed for the afternoon. Surely it is not necessary to close them all on the same afternoon; if so, could not a notice be sent to the gardening papers to that effect? *W. Herbert Cox, 9, Gray's Inn Square, W.C., November 7, 1914.*

[We have submitted the above letter to the Kew authorities, and they have kindly sent us the following explanation of the circumstances described by our correspondent:—On Friday a sudden and urgent appeal for about twenty members of the gardening staff, who have also received ambulance training, was made by the Richmond section of the British Red Cross to assist in transferring wounded soldiers from an ambulance train to the Red Cross Hospital in Richmond. The gardening staff at Kew is already considerably reduced in consequence of the war, and whilst it was felt under the circumstances it was a humane duty to allow our men to afford the assistance they had been begged to render, it was at the same time necessary to leave the houses without protection or else to close them to the public. It was anticipated that the men would be absent for an hour at most. As it happened, however, owing to delay in the arrival of the ambulance train, the men were on duty at Richmond Station from about 1.30 till after 7 p.m. If Mr. Cox had thought of calling at the Director's office he would have learned the reason for the sudden and temporary closing of the houses, and if there had been anything in any of the houses which he had particularly wished to study arrangements would have been made to admit of his doing this.]

Pears in Kent.—Nearly all varieties of Pears fruited well with us this year. Varieties which cropped especially well are Clapp's Favourite, Doyenné du Comice, Beurré Superfin, Marie Louise, Beurré Diel, Beurré Alexandre Lucas, Conference, Easter Beurré, Joséphine de Malines, and Pitmaston Duchess. One of the fruits of Pitmaston Duchess measured 6 inches long and had a girth of 13½ inches; it weighed 28 ounces. *A. J. Hawkes, Hall Place Gardens, Tunbridge.*

Weather in October.—The past month has been far from justifying its reputation of "Chill October," for the weather has been exceptionally mild with an entire absence of strong winds. There were twelve rainy days in the month, with a total fall of 2.35 inches, the heaviest fall being on the 26th, when 0.58 inches was recorded. Of sunshine we had a total of 88 hours, the brightest day being the 18th with 8¼ hours; there were only seven days on which the sun did not appear. During the month the barometer varied from 29.3 inches on the 8th to 30.4 inches on the 19th and 20th; the mean for the month being 30 inches. The mean temperature was 48°, with mean maxima and minima of 53.5 and 42.6 respectively, giving a mean range of temperature of 10.9°. On the 5th the highest maximum temperature 62° was registered, and on the 7th the lowest maximum of 47°; the highest minimum of 53° was on the 1st, and the lowest minimum of 32° on the 28th. For the month the relative humidity of the air was 88 per cent., while the soil temperature at a depth of 18 inches fell from 52.5° to 47°. *James Malloch, Director of Studies, Training College, Dundee.*

Land Cure for Unemployment.—In answer to Mr. Weathers (p. 311), I quite understood his letter, and stated that his proposal was a good one for finding work for the unemployed by digging the land at present turned over by the plough. I pointed out that the price paid here was £1 per acre. Consequently I considered that it would be very unlikely that these unfortunate people would be eager to undertake the work. He, with others, may doubt the fact, but there are strong able-bodied men used to the work who do undertake the digging at this price, and it is surprising how well it is done. But Mr. Weathers puts the case in a nutshell when he says, "No doubt a vast number of the unemployed could not dig at all. I have seen large gangs of 'all sorts,' in which the great majority of the men get blisters on their hands in less than half an hour, and who would not dig ten rods of ground in a month, and they are paid a minimum wage of 30s. per week out of the rates." Well, if this assertion is true, these unemployed men can seek other spheres of usefulness, and leave the farmer and his plough to carry on the work of turning over the soil. As Mr. Weathers proceeds in his observations he will find crops will get poorer, consequently less remunerative, owing to lack of suitable manure, an essential thing, as I pointed out, for both ploughed and dug ground. How often does one see a truck of manure in one of our country sidings now? The fact is, it cannot be found in motor garages, whilst gathered from tar-paved roads it spells ruin. As regards the latter part of Mr. Weathers' remarks, I may say, speaking from practical experience as a gardener, that I have known what it is to feel tired after a day's hard digging. A gardener's life is not at all the proverbial "beer and skittles" just at this present crisis, when the scions of our country families are fighting, and in some cases have already given up their lives for our King and country, and, as a family man, I have also my heartaches. *P. E. Cornish.*

DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.—The second meeting of the winter session was held on the 23rd ult. The president, Mr. E. H. Christy, occupied the chair, and about thirty-five members were present. Mr. C. Wakeley, staff lecturer at the Agricultural Institute, gave a lecture on "The Vegetable Garden and Its Present Importance." The lecturer drew attention to the pamphlets which were freely circulated, and the advice given with regard to the cropping of every available piece of land with vegetables, in order to ensure a good supply during the war period. He pointed out that caution should be displayed before acting on the advice there given, because some of the cultural operations advised, if carried out now, would be useless. The lecturer also stated that in the majority of gardens and allotments little provision was made for the winter crops.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

UNE LETTRE DU PREMIER VICE-PRÉSIDENT DE LA SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

Je vous envoie d'abord nos plus vifs remerciements pour la sympathie que vous témoignez aux horticulteurs de notre pays dans ces circonstances aussi tragiques. Les rudes combats que les nations alliées livrent quotidiennement pour la cause de la civilisation et la défense de nos libertés, sont destinés à resserrer davantage les liens de fraternité existant déjà entre les horticulteurs français et leurs confrères de la Grand Bretagne, de la Belgique, et de la Russie !

Puisse la solidarité universelle sortir de cette lutte sans précédents dans l'histoire.

La pensée que vous avez de publier dans votre estimé journal les renseignements concernant le sort des horticulteurs français et de leurs cultures, est assurément excellente, et j'en suis très partisan, seulement nous ne possédons encore que des informations très succinctes à ce sujet. Lorsque nous serons à même de connaître, en détail, les ravages causés dans les exploitations horticoles, je prends bonne note de votre proposition, et je m'efforcerai de vous documenter aussi complètement que possible.

Nous avons déjà examiné la possibilité de faire un appel à tous les membres de notre profession en faveur de ceux de leurs collègues les plus éprouvés, mais là encore il convient d'attendre, si nous voulons que cet appel soit profitable, et que les souscriptions ainsi obtenues puissent être réparties d'une façon légitime.

Bref, je suis très heureux d'échanger avec vous des considérations de semblable nature et de constater l'uniformité de vues qui règne entre l'horticulture anglaise et celle de mon pays.

Veuillez agréer, cher monsieur, l'expression de mes meilleurs sentiments. *Abel Chatenay, Paris, le 20 Octobre, 1914.*

LA BELGIQUE SOUS LES ALLEMANDS.

UNE LETTRE DU REDACTEUR EN CHEF D'UN JOURNAL HORTICOLE BELGE.

C'est avec un vif plaisir que j'ai appris la généreuse initiative que viennent de prendre la Royal Horticultural Society et le *Gardeners' Chronicle*, en lançant leur appel aux horticulteurs anglais en vue de venir en aide à leurs collègues belges éprouvés par la guerre.

Que de ruines à réparer là bas, que de malheureux à secourir !

Parmi les régions gravement atteintes par les horreurs de l'invasion se trouve celle de Malines. La nombreuse population de la campagne environnante y traversait une ère de prospérité, grâce à l'extension qu'elle avait donnée à la culture maraîchère. Il n'y reste que des ruines.

Déjà le génie belge avait rasé un certain nombre d'établissements horticoles situés dans la ligne de tir des forts, entre autres celui de M. Van Slagmolen, membre du Conseil Supérieur de l'Horticulture, à Wavre Ste. Catherine ; puis les batailles qui se sont succédé pendant des semaines au Sud de la position d'Anvers et le bombardement subséquent des forts, ont achevé l'oeuvre de destruction. De nombreux maraîchers auxquels un travail opiniâtre avait assuré le bien-être, se trouvent aujourd'hui sans ressources, exilés loin de leurs villages qui ne sont plus que des monceaux de décombres. La nation anglaise, si admirable de dévouement, a compris leur détresse et veut l'alléger. Merci.

Vous vous intéresserez probablement à quelques détails sur les événements en Belgique. Dès le début de la guerre, les échos d'atrocités commises aux environs de Liége nous étaient parvenus, mais nous vivions dans une quiétude relative, lorsque le 19 août au soir, un cortège lamentable de fuyards originaires de Weert St. Georges, village situé à 3 lieues vers l'Est, arriva chez nous à Hoeylaert qui, comme vous le savez, se trouve à quelque huit milles au Sud-Est de Bruxelles ; les Allemands étaient là, brûlant tout sur leur passage ! J'eus plus tard l'occasion de voir ce village de Weert ; de nombreuses maisons y avaient été incendiées, des personnes brûlées vives, parce qu'un détachement de troupes régulières belges avait eu l'audace de résister à l'envahisseur ! Ce cas s'est présenté dans un nombre considérable de localités ; la population civile a expié le crime de notre armée, le crime de défendre le territoire national !

Le lendemain matin (20 août), je me rendais au bureau à Bruxelles quand j'appris que des troupes allemandes passaient à 3 milles au Sud de Hoeylaert, se dirigeant vers Waterloo. A Bruxelles on assurait que l'ennemi était aux portes de la ville. Voulant rentrer l'après-midi, je me heurte à une colonne allemande dont le défilé avait commencé à 11 heures et ne cessa qu'à 4h. 30. Toutes les routes au Sud de Bruxelles, allant de l'Est à l'Ouest, et ce jusqu'à Ottignies, soit sur une distance de dix-huit milles, livraient passage à des milliers de Teutons.

Beaucoup de soldats chantaient : " Uns Vaterland muss grösser sein " (notre patrie doit être plus grande) ; quelques uns avaient l'air grave, pleuraient même à la vue des enfants, car bientôt une partie de la population, enhardie par le calme de ces troupes, s'était rangée sur leur passage.

Devant ma maison, je trouve un détachement au repos. Un soldat, la main bandée, se promène de groupe en groupe. Un de ses compagnons m'accoste et me dit, en allemand, qu'un civil vient de le blesser d'une balle de revolver. J'ai beau protester qu'aucun civil *n'a pu* tirer puisque toutes les armes ont été déposées à la maison communale ; rien n'y fera : " Man hat geschossen (on a tiré), et quand le commandant sera mis au courant, votre village sera rasé ! " Vous décrire l'angoisse de la population et son indignation contre l'acte stupide du civil qui avait tiré serait impossible ; de minute en minute on attend le signal du bombardement, mais ô bonheur ! le détachement se retire sans avoir fait de violences.

Le même soir, un voisin m'assure que le soldat blessé l'était depuis plusieurs jours, le bandage s'était détaché au cours de la marche ; on l'avait renouvelé sous ses yeux. Et cependant cet individu laissait répandre le bruit qu'un villageois venait de le blesser ; il faut vraiment croire que c'est une fête pour certains allemands que d'assister au spectacle d'un village ou d'une ville mis à feu et à sang.

Dans la soirée, une arrière garde, composée d'éléments du 31e d'infanterie, arrive à Hoeylaert. Les hommes étaient affamés et fourbus par une longue marche (ils prétendaient avoir fait ce jour-là 32 milles). Revolver au poing, ils pénètrent dans les maisons et exigent : " Brot und Speck " (du pain et du lard), parfois aussi " Wein." Sous les yeux des habitants terrorisés ils vident les garde-manger, les caves, en ricanant que les Français payeront le tout. Chez un petit agriculteur qui se battait au front de notre armée (et qui y fut blessé quelques jours après) ils volent les porcs et les abattent à coups de sabre ; le lard est grossièrement enlevé et jeté à la rue. Le reste est mis au chaudron pour faire la soupe. *Hector Van Orshoven, Agent technique à l'Office Horticole, Bruxelles, Rédacteur-en-Chef du " Tuinbode," Belgique.*

(*A suivre.*)

RENSEIGNEMENTS SUR M. RONSE, ECOLE D'HORTICULTURE DE GAND.

Nous apprenons qu'un ami de M. Ronse, Directeur de l'Ecole d'horticulture de l'Etat, à Gand, Belgique, a essayé dernièrement d'entrer en communication avec lui, mais sans succès. Il l'inviterait à passer l'hiver dans l'Amérique du Nord, puisque toute activité dans son pays est à présent arrêtée. Nous serions heureux d'apprendre l'adresse de M. Ronse pour le mettre en rapport avec l'ami américain dont il est question ci-dessus. Nous saurions gré également à ses compatriotes de nous donner des renseignements au sujet de sa résidence.

DERNIÈRES NOUVELLES DE BRUXELLES ET DE GAND.

Nous avons le plaisir d'annoncer à nos lecteurs que nous venons de recevoir des nouvelles, quoique rares, de nos amis de Bruxelles et des environs. M. Gentil, du jardin botanique de Bruxelles, est sain et sauf, et cet établissement est en bon état. M. Peeters n'a souffert aucun mal, et son établissement à echappé aux dévastations des Huns.

De l'établissement de M. Jacob-Makoy, à Liége, nous ne savons malheureusement rien, mais il est à espérer qu'il aura été épargné. Le bel établissement de M. de Massanges n'est, hélas ! qu'un monceau de ruines. La plupart des autres établissements étaient intacts au moment du départ de notre informateur. Ce dernier n'avait pas appris que des associés des principales firmes avaient été molestés. On est sans nouvelles du gendre de M. Raphael de Smet, qui est médecin militaire ; sa famille s'est réfugiée à Folkestone. A Meirelbeke, paraît-il, rien n'est arrivé, et M. Jules de Cock va bien. De Melle, où il y a eu des batailles terribles, on rapporte qu'une des serres de MM. Bier et Ankersmit est abîmée par un obus. En général il semble que les établissements de Bruxelles, de Gand et de Bruges ont echappe. Une nouvelle bien triste est celle de la mort du Professeur Ambroise, de Vilvorde. On dit qu'il s'était rendu à Waremme, où il aurait été tué d'un coup de fusil (ou fusillé ?). Nous espérons bien que cette nouvelle sera démentie, mais nous craignons qu'elle ne soit vraie. Les soldats teutons se sont comportés comme des bêtes sauvages dans l'habitation d'un horticulteur bien connu de la banlieue gantoise. Ils ont pillé la cave, se sont enivrés de ses vins les plus fins ; ont fouillé toutes les chambres, volant les vêtements, les bottines, les literies, etc. !

AUX JARDINIERS BELGES ET FRANCAIS.

Les jardiniers ou maraîchers belges et français réfugiés en Angleterre, qui désireraient trouver un emploi, sont invités, à se mettre en rapport avec le *Gardeners' Chronicle*, 41, Wellington Street, Strand, Londres. Les offres d'emploi et d'hospitalité que nous avons reçues de nos lecteurs nous mettent à même de caser un certain nombre de réfugiés ayant quelque expérience en horticulture.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

November 3.—*Present:* Mr. E. A. Bowles, M.A. (in the chair), Dr. Keeble, Prof. Lefroy, Messrs. Odell, Worsdell, Worsley, Hales, Holmes, Fraser, Bennett-Poë, and Chittenden (hon. secretary).

Teasel malformed.—Mr. Worsdell stated that he had examined the Teasel head shown by Mr. Bowles at the last meeting and had found, besides the peculiarities mentioned then, proliferation and branching into secondary heads (still of small size) at the apex.

Hybrid Willows.—Mr. Fraser showed a series of beautifully prepared specimens of Salix hybrids, mostly collected in Surrey, and between the species cinerea, aurita and viminalis.

Lobing of Oak leaves.—Mr. Bennett-Poe showed some very deeply lobed leaves of Quercus cerris, the divisions reaching nearly to the midrib.

Bifurcation of leaves.—Mr. Bowles drew attention to forked terminal leaflets of the Common Ash, and to a forked leaf of Rhus cotinoides which he exhibited. Mr. Fraser said that similar bifurcation was frequent in leaves of Ulmus campestris var. viminalis.

Origanum Marjorana, etc.—Mr. Holmes having now completed his examination of the Marjoram shown by Mr. Fraser on September 22, reported as follows :—

The plant is identical with a species received from Cyprus as Origanum and examined at the Imperial Institute[*], where its volatile oil was found to contain 84 per cent. of carvacrol, a substance not found in the oil of Origanum Marjorana. The plant was examined by me and reported on in the *Pharmaceutical Journal* for September, 1907, p. 378, and elsewhere[†]. I referred the plant to Origanum marjoranoides of Willdenon, which is distinguished from O. Marjorana by its woody stem and perennial habit, and by the flowerhead being sessile at the top of the common peduncle and by the hoary leaves.

Dr. O. Stapf considers that it is identical with the Origanum dubium of Boissier, who states that there are two minute teeth at the base of the calyx. These are not present in Boissier's own specimens, according to Dr. Stapf, nor are they in the Cyprus Origanum.

Willdenon's specimen is in the Berlin Herbarium, and I have not been able to see it. Whether his plant is identical with Boissier's O. dubium, and whether O. dubium yields an oil containing carvacrol has not been ascertained, but that the Cyprus Origanum is not identical with O. Marjorana may be regarded as certain, since the volatile oil of the latter contains no carvacrol. Probably Mr. Fraser's plant was raised from seeds of the plant sent from Cyprus, of which I distributed some seeds.

Pear × Quince.—Mr. J. C. Allgrove, of the Langley Nursery, showed several fruits of the Pear raised by Mr. John Seden from the Pear Bergamotte Esperen crossed with pollen from Portugal Quince (see *Journal, R.H.S.*, Vol. 33, pp. clxvii, clxxi). The fruits of this type are essentially Pears, very similar in shape and appearance to Easter Beurre, very short stalked, roundish, and plentifully dotted all over with large dots. The flavour is good and the Pear ripens long before its Pear parent Bergamotte Esperen, being fit to eat at the end of October. It will be remembered that the other plant raised from the same fruit was Quince-like in form, and never becomes soft.

Curiously-marked Apple.—Mr. Holmes showed a small fruit of Apple Cox's Orange Pippin with a segment of about one fifth of the normal red colour of that variety, the remainder being green, and the lines of demarcation being very sharply defined. This is no doubt due to somatic segregation of the characters upon which colour production depends, and is similar in kind to the phenomena grouped under the term "bud variation," and to the results seen in parti-coloured flowers.

PLANT PRESS AT WISLEY.

At their meeting on the 3rd inst. the President and Council made the following award in connection with their trials of horticultural sundries at Wisley :—

Commended.

Fothergill Plant Press.—Sent by Dr. Claud F. Fothergill.

NATIONAL CHRYSANTHEMUM.

November 4.—A committee meeting of this society was held at Essex Hall, Strand, on Wednesday, the 4th inst. In addition to the novelties submitted for award, trade growers contributed attractive groups of cut blooms. The Floral Committee awarded 5 First-class Certificates and 3 Cards of Commendation.

First-Class Certificates.

Chrysanthemam R. Goodbourn.—A single-flowered variety of the "Mensa" type, and, like that variety, of round form. The velvety crimson colour of the many florets is enhanced by the bright yellow disc. It is a handsome flower and should prove to be popular for decorative purposes. Shown by Mr. H. Hogben, Sevenoaks.

C. Captain Fox.—An exhibition, incurved Japanese variety classed with Mrs. Gilbert Drabble, but not so large. The ruby-crimson florets are long and of medium breadth. It is a handsome, compact bloom, the golden reverse which appears occasionally adding to its attraction. Shown by Messrs. W. Wells and Co., Ltd.

C. W. Rigby.—A canary-yellow coloured Japanese variety, also of Mrs. Gilbert Drabble type. The long, broad florets are substantial, and the blooms are deep and of good form. Shown by Mr. W. Rigby, Blickley.

C. Miss Amy Poulton.—This beautiful variety may be described as a flesh-pink Lady Talbot. There is an attractive yellow suffusion in the centre of the blooms which are of good size and very compact. Shown by Mr. Norman Davis.

C. Mary Wild.—An exceedingly beautiful single-flowered variety of medium size and rose pink colour. It is of the "Mensa" type, but of rather smaller size. Shown by Mr. G. Mileham.

Cards of Commendation.

C. Red Star.—An exceedingly free-flowering and attractive single-flowered variety of Mary Richardson type. The colour is registered as bright terra-cotta red. The sprays denoted a hardy and sturdy habit. Shown by Messrs. Cragg, Harrison and Cragg.

C. Norman Eachus.—A canary-yellow, single-flowered variety which is very much like Orlando, that received an Award last year. Shown by Mr. George Mileham.

C. Lizzie Morris.—A milk-white, single-flowered variety of rather more than medium size. The revolute florets are long and have a pointed appearance. Also shown by Mr. G. Mileham.

Mr. Norman Davis, Framfield, Sussex, filled a table with exceedingly fine blooms of Japanese varieties. Outstanding varieties were Miss A. E. Roope, which is over 9 inches deep and of delightful rich yellow colour, Rosamund, Dandy, and Queen Mary. In another part of the hall Mr. Davis displayed many single varieties. (Gold Medal.)

Messrs. H. J. Jones, Ltd., Hither Green, made a fine display, filling a corner of the hall with large stands of a few varieties. These large epergnes of first-class blooms, set off by autumn foliage, were very imposing. The chief varieties so well arranged were Bob Pulling, Mrs. R. C. Pulling, and Mrs. Tickle. (Gold Medal.)

Mr. Philip Ladds, Swanley Junction, Kent, gave the central position in a splendid corner group to 10 immense blooms of Mrs. G. Drabble. The largest bloom measured 32½ inches in circumference, 10 inches across, and 8½ inches deep. Bob Pulling and a selection of single varieties were also very attractive. (Gold Medal.)

Messrs. Cragg, Harrison and Cragg, Heston, Middlesex, contributed a selection of market varieties of high merit. The bunches "faced," for safe transit and ready display, had a formal but pleasing appearance. Of the many sorts Freda Bedford (orange-buff), Crimson King, T. R. Weston (yellow), and Yellow Moneymaker are typical of the Japanese varieties, whilst the singles included Jessica, Max, and Orlando. (Gold Medal.)

Messrs. W. Wells and Co., Merstham, Surrey, showed a good selection of Japanese and Single varieties, which included Queen Mary, Daily Mail, and Mrs. G. L. Wigg. (Small Gold Medal.)

Lord Foley, Ruxley Lodge, Claygate (gr. Mr. H. C. Gardner), showed 12 exhibition Japanese blooms, for which the regulation board was inadequate in size. (Silver Medal.)

W. Mann, Esq., Ravenswood, Bexley (gr. Mr. J. Simon), staged a dozen exhibition blooms of high quality. The principal varieties were His Majesty, Kara Dow, and Mrs. A. T. Miller. (Silver Medal.)

Miss Langworthy, Gays House, Holyport (gr. Mr. T. J. Brown), was awarded a Large Silver Medal for a collection of Anemone-flowered varieties.

Silver Medals were awarded to Mr. F. Fitzwater, Bushey Lodge Gardens, Teddington; Mr. A. F. Tofield, Chandlersford, Southampton; and Mr. H. Reddern, Manor House Gardens, West Wycombe, for vases of cut blooms.

VENTNOR CHRYSANTHEMUM.

November 3.—The annual autumn show of the Ventnor and Undercliff Chrysanthemum Society was held in the Town Hall, and as it was the only one of the kind held in the Isle of Wight this season it was unusually well attended, and entries came in from most of the Island towns. The show was held very largely on behalf of the local War Relief Fund, and a good many of the exhibits were disposed of for its benefit, the net profit of the show and sale by auction being about £20. A Silver Challenge Shield was awarded to Mr. M. Silsbury, of Shanklin, for twenty-four Japanese cut blooms, amongst the collection being fine specimens of the varieties F. T. Mew, Golden Queen, and Frances Jolliffe. The Misses Hue (gr. Mr. Steele) were successful in several classes, and gained 1st prizes in the classes for dessert Apples and twelve Onions, and 2nd prizes in the classes for two bunches of black Grapes, two dishes of Potatos, two plants of incurved Chrysanthemums, and specimen plants of Japanese and incurved Chrysanthemums. They also won the special prizes offered by Messrs. Sutton and Sons for a collection of vegetables and one given by Messrs. Toogood for six distinct kinds of vegetables. For a specimen plant of Japanese Chrysanthemum Miss Mitchell was 1st (gr. Mr. W. W. Sheath); Mr. J. Love was successful in the class for six blooms, any one variety, and Mr. A. Plumbley was 2nd.

DERBYSHIRE CARDENERS'.

November 6-7.—The annual Chrysanthemum show of this Society was held at the Albert Hall, Derby. The exhibition was in every respect a success, and the proceeds were devoted to the National Relief Fund. The number of entries constituted a record. A group of plants, occupying 250 square feet, shown by the Rev. H. Buckston, Sutton Hall (gr. Mr. A. Shambrook), surpassed anything previously shown at Derby, and was awarded a gold medal. The centre of the exhibit was massed with Begonia Ideala, while on each side were Begonia amabilis and B. optima, Cyclamen Mrs. Buckston and C. Victoria Buckston, a new fringed variety, all tastefully arranged with Eulalia variegata and Ferns, whilst at the back were Chrysanthemums.

Mr. Shambrook also staged a pretty exhibit of Violets, edged with Saintpaulia ionantha.

A plant of single Chrysanthemum Altrincham Yellow, bearing 975 blooms, was shown by Mr. A. Preston Jones, Mickleover House.

The Silver Challenge Cup offered by Mr. Jones for twelve Japanese blooms in vases arranged with Ferns was won by C. W. Catt, Esq., The Outwoods, Duffield (gr. Mr. J. H Coley).

---

[*] *Bull. Imp. Institute*, 1906, vol. IV., pp. 207, 297.

[†] *Perfumery and Ess. Oil Record*, February, 1913, p. 41, c. fig.

For eighteen Japanese blooms, twelve varieties, Sir Wm. Bass, Bart., Byrkley (gr. Mr. R. Nisbet), led with fine specimens of Mrs. G. Drabble, Mrs. C. Farrow, Mrs. Marsham, R. Luxford, W. G. Hartman, Lady Talbot, Mrs. Kelly, Queen Mary, and others. 2nd, Miss Wilmot, Chaddesden Hall (gr. Mr. J. Evans). The 1st prize for six vases of Japanese, three of one variety, was won by Mr. R. Nisbet; 2nd, Mr. J. H. Coley.

For twelve incurved in not fewer than eight varieties, Mr. R. Nisbet again excelled with Buttercup, Mrs. Denyers, Mrs. Wiseman, M. Shields, Romance, C. H. Curtis, H. W. Thorp, Ada Owen; 2nd, J. Wood; 3rd, F. Meakin.

There were three classes for groups of Chrysanthemums, and the 1st prize winners were J. A. Bacon, C. S. Buck, Derby, and N.C.S. certificate, and J. R. Fairbanks, Derby, respectively.

Among other notable exhibits was a collection of Cyclamens, staged by Mr. G. T. Pallett, gardener to G. H. Strutt, Esq., Makeney.

ROYAL HORTICULTURAL OF ABERDEEN.

October 31.—At the annual meeting of this society Mr. Simpson, vice-chairman of directors, presided. He moved the adoption of the annual report and statement of accounts. The report pointed out that the show, which was fixed for August 20, 21, and 22 last, was abandoned owing to the national crisis. From a horticultural point of view this was much to be regretted, as the season having been favourable the show promised to be an exceptionally good one. The income for the year amounted to £89 10s. 6d., and the expenditure to £62 8s. 7½d., leaving a surplus of £27 1s. 10½d., which, with the credit balance of £82 16s. 5d. at the beginning of the season, made a credit balance of £109 18s. 3½d. This was exclusive of the sum of £60 standing at the credit of the reserve fund. The chairman exhorted all present to do their best to secure new members. Mr. Alexander Robson, seedsman, Aberdeen, seconded. He did not think it would have been possible for the society to have held a successful show this year. The report was adopted, and all the directors and officials were re-elected, the only change being that Mr. James King, Balnagask, Aberdeen, was elected a director in the place of Mr. A. M. Cocker, who retired.

Obituary.

Nelson B. White.—*Horticulture* records the death on October 20 at his home, Norwood, Massachusetts, U.S.A., in his 91st year, of Mr. Nelson B. White, who raised "several varieties of Grapes that stood at the head of nursery lists for years." One of the latest varieties he raised was named Early Bird, which Mr. White considered would prove as famous in the Massachusetts district as the Concord Grape did in New York.

James Coombs.—We regret to record the death, on the 30th ult., of Mr. James Coombs, formerly gardener for 33 years at Englefield, Reading. He was gardener to the late Richard Benyon, Esq., also to the present owner, J. Herbert Benyon, Esq. (Lord Lieutenant of Berks), and on his retirement five years ago was granted a pension. The funeral service took place at Englefield Parish Church, and he was carried to the grave by employees from Englefield Gardens.

CATALOGUES RECEIVED.

Thomas Rivers & Sons, Sawbridgeworth.—Fruit Trees, Roses, Shrubs.
E. P. Dixon & Sons, Ltd., Hull.—Fruit Trees, Roses, Trees and Shrubs.
Alex. Dickson & Sons, Ltd., Newtownards, Co. Down.—Roses.
John Jefferies & Son, Ltd., Royal Nurseries, Cirencester.—Roses and Trees.
R. Murrell, Rose Acre, Shepperton-on-Thames.—Roses.
T Smith, Daisy Hill Nursery, Newry.—Trees, Shrubs, Roses.

MARKETS.

COVENT GARDEN, November 11.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz.	3 0- 3 6
Bouvardia, pink, per doz. bun.	4 0- 6 0
— white	4 0- 5 0
Camellias, white, per doz. blooms	1 6- 1 9
Carnations, per dozen blooms, best American varieties	1 0- 1 6
— smaller, per doz. bunches	9 0 10 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz.	1 9- 2 0
— yellow per doz.	1 9- 2 0
— pink ,,	1 9- 2 0
— bronze ,,	1 6- 2 0
— white, medium per doz.	1 0- 1 6
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun.	3 0- 5 0
— — yellow, per doz. bun.	2 6- 4 0
— — pink, per doz. bun.	3 0- 4 0
— — bronze, per doz. bun.	3 0- 4 0
— singles, disbudded, per doz. blooms	0 9- 1 3
— — sprays, per doz. bunches	4 0- 8 0
Eucharis, per doz.	1 6- 2 0
Gardenias, per box of 15 and 18 blooms	1 6- 2 6
Lapageria alba, per doz. blooms	— —
Lilium auratum, per bunch	2 6- 3 0
— longiflorum, per doz., long	2 0- 2 3
— — short	1 9- 2 0
— lancifolium album, long	1 3- 1 6
— — — short	1 3- 2 0
— — rubrum, per doz., long	1 3- 1 6
— — — short	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special	15 0 —
— special	10 0-12 0
— ordinary	8 0- 9 0
Marguerites, per doz. bunches	1 0- 1 3
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya	9 0-10 0
— C. Harrisonii, per doz. blooms	4 0- 5 0
— Cypripedium	1 6- 2 0
— Odontoglossum crispum	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches	5 0- 6 0
Roses: per dozen blooms, Bride	1 6- 2 0
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	1 0- 1 3
— Liberty	1 6- 2 0
— Madame A. Chatenay	1 0- 1 6
— Melody	1 3- 1 6
— My Maryland	1 0- 1 3
— Niphetos	1 3- 1 6
— Prince de Bulgarie	1 0- 1 6
— Richmond	1 6- 2 6
— Sunburst	1 3- 2 0
— Sunrise	1 0- 1 6
— White Crawford	1 6- 2 0
Statice, mauve, per doz. bunches	3 6- 4 0
— white, per doz. bunches	4 0 –
Stephanotis, per 72 pips	2 0- 2 0
Tuberoses, on stems, per doz	0 5- 0 6
— short, per doz.	0 3- 0 4
Violets, English, per doz. bunches	1 0- 1 6
— Princess of Wales, doz. bun.	2 0- 3 6
White Heather, per doz. bunches	4 0- 6 0

Cut Foliage, &c. Average Wholesale Prices.

	s.d. s.d.
Adiantum Fern (Maidenhair) best, per doz. bunches	4 0- 6 0
Agrostis (Fairy Grass), per doz. bunches	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches	12 0 18 0
— Sprengeri	6 0-12 0
Autumn foliage, various, per doz. bunches	6 0-10 0
Carnation foliage, doz. bunches	3 0- 5 0
Croton foliage, doz. bunches	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch	1 0- 1 6
Honesty, per doz. bun.	10 0 12 0
Lichen Moss, per doz. boxes	10 0-12 0
Moss, gross bunches	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches	8 0- 9 0

Remarks.—Business is improving, Tuesdays, Fridays and Saturdays being the principal days for general trade. There are many very fine single Chrysanthemums, and both spray and disbudded blooms are obtainable at moderate prices. The supply of Violets has increased; the variety Princess of Wales is exceptionally good. Carnations are very plentiful. At the end of last week Lilium longiflorum reached its highest value for some considerable time past, but prices are lower again. Roses are more valuable, especially such varieties as Liberty, Richmond, Niphetos, White Crawford, Mme. Abel Chatenay, and Kaiserin Augusta Victoria. Lily-of-the-Valley still sells at a moderate price. Large Cattleyas are the most plentiful of Orchids. As the supply of flowers from France is limited it is expected that their prices will advance shortly.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri	6 0- 8 0

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s. d. s. d.
Aspidistra, per doz., green	18 0-30 0
— variegated	30 0-60 0
Begonia Gloire de Lorraine, 48's, per dozen	10 0-12 0
Cacti, various, per tray of 15's	4 0 —
tray of 12's	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen	10 0-12 0
Erica nivalis, 48's, per dozen	10 0-12 0
— — thumbs, per doz.	3 0- 5 0
— gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 9 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's	12 0-20 0
Ferns in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen	8 0-12 0
— in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz.	4 6- 5 0
— — 60's, per doz.	3 0- 3 6
Geonoma gracilis 60's per dozen	6 0- 8 0
— larger, each	2 6- 7 6
Kentia Belmoreana, per dozen	5 0- 8 0
Kentia Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0-36 0
Latania borbonica, per dozen	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz.	15 0-21 0
— longiflorum, per dozen	15 0-18 0
Lily-of-the-Valley	—
— 48's, per dozen	21 0-24 0
Marguerites, in 48's, per doz., white	—
Pandanus Veitchii, per dozen	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Solanums, 48's, per dozen	8 0- 9 0
Spiraea, white, 32's per dozen	6 0- 8 0

Remarks.—Business is still quiet, but there is an abundant supply of flowering plants. A few salmon-coloured Cyclamens in forty-eight pots were soon all purchased. There is a steady trade in Palms, Ferns, and other foliage plants. Ericas are too plentiful, but tiny plants of pink and white varieties are selling better, as they are in demand for furnishing small vases.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples—	
— Californian Newtown Pippins, per box	7 0- 9 0
— English dessert, per ½ bushel	2 6- 4 6
— cooking, 1 bush.	2 6- 4 6
— Nova Scotia, per brl.	8 0-16 0
Bananas, bunch:	
— Medium	5 0 —
— X-medium	6 0 —
— Extra	7 0 —
— Double X	8 6 —
— Giant	9 0-10 0
— Red, per ton	£20 —
— Jamaica, p. ton	£15 —
Cobnuts, per lb.	0 4- 0 5
Cranberries, per case	8 6-11 0
Grapes: Alicante, per lb.	0 7- 2 0
— Almeria	10 6-12 0
— English, Gros Colmar, per lb.	0 10- 2 0
— Muscat of Alexandria	1 0- 3 6
Grapes (*contd*)—	
— Canon Hall, per lb.	2 0- 5 0
Medlars, per ½ sieve	2 6- 3 0
Melons	0 9- 2 0
Nuts, Brazils, p. cwt.	60 0 —
— Chestnuts, Redon, per bag	14 0-18 6
— Walnuts (English), per doz. lb. Doubles	7 0- 9 0
— — Singles	3 0- 5 0
— — French, per bag	7 6-10 0
Pears, American, per barrel	18 0-22 0
— Californian, per case	9 0-12 0
— English, ½ sieve	3 0- 4 0
— stewing, per bushel	3 0- 5 0
Quinces, per ½ sieve	3 0- 3 6
Sloes, per doz. lbs.	2 0 —

Remarks.—The stocks of English and imported Apples are large. English supplies of Pears are limited, but American Pears are plentiful, the bulk consisting of the variety Keiffer. Cases of Pears from California to hand this week consist of the varieties Doyenné du Comice and Winter Nelis. Black Grapes are still available in quantity, but Canon Hall Muscat is less plentiful. The supply of Walnuts is decreasing, but Chestnuts and Cobnuts are still plentiful. The consignments of English Tomatos are lessening, but those from Teneriffe are increasing. The supply of cultivated and field Mushrooms has exceeded the demand, as also has that of forced Beans. Cucumbers are scarce. *E. H. R., Covent Garden, November 11, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	5 0- 6 0
Beans, French, per lb.	0 4- 0 6
Beetroot, per bushel	3 0- 4 6
Brussels Sprouts, per ½ bus.	1 0- 1 6
Cabbages, per tally	5 0- 6 0
Carrots, per cwt.	3 0- 3 6
Cauliflowers, per tally	5 0- 7 6
Celery, per doz. bun.	7 0- 9 0
Cucumbers, per flat	7 0-10 0
Eschallots, per cwt.	7 0 —
Garlic, per lb.	0 6- 0 7
Horseradish, English, per bundle	2 6- 5 0
Leeks, per dozen	1 6- —
Lettuce, per doz.	1 0- 1 6
Mint, per doz.	2 0- 4 0
Mushrooms, cultivated, per lb.	0 6- 0 8
— Buttons	0 6- 0 8
— Field	0 2- 0 3
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per cwt.	8 6 —
Parsley, per dozen bunches	1 0- 2 0
Parsnips, per cwt.	4 0- 4 6
Sage, per dozen	2 0- 2 6
Spinach, per bus.	2 0- 2 6
Tomatos, English, per doz. lbs.	4 6- 5 0
— seconds	2 0- 4 0
Thyme, per dozen bunches	2 0- 3 0
Turnip, English, per cwt.	2 6- 3 0
Watercress, per doz.	0 4- 0 6

Remarks.—Paris Green Asparagus is on sale; the heads are packed in bundles of 36. Vegetables of the ordinary kinds are much more plentiful, but trade is still slow. *E. H. R., Covent Garden, November 11, 1914.*

New Potatos.

	s. d. s. d.
Bedford	3 0- 3 6
Blackland	3 0- 3 3
Dunbars, per cwt.	4 6 —
Lincoln	3 0- 4 0
Kent	3 3- 4 0
Essex	3 0- 3 3

Remarks.—Trade has improved slightly, and prices have advanced a little. Consignments of tubers to the market are satisfactory. *Edward J. Newborn, Covent Garden and St. Pancras, November 10, 1914.*

LAW NOTE.

NURSERY FOR WOMEN GARDENERS.

In the Chancery Division of the High Court of Justice the action Hamilton v. Locksheath Nurseries, Ltd., was heard recently. Plaintiffs were Miss Lillias Hamilton, M.D., and Miss Maud Joachim, of the College, Studley, Warwickshire, Miss Eleanor Archdale, Mrs. Helen Archdale and Miss Peers, and they sought as against the Locksheath Nurseries, Ltd., Flagstaffe, Southampton, rectification of the register of the company and rescission of the contract to take 2,000 £1 shares in the company on representations which, they alleged, had failed. Plaintiffs also claimed damages as against the personal defendants, Mrs. Katherine Atkinson, managing director of the company, and her husband, Mr. G. H. Atkinson, for misrepresentation. Mr. Hughes, K.C., said the first plaintiff, Miss Hamilton, was a distinguished lady doctor of medicine, and was the head of a ladies' horticultural college in Warwickshire. The other lady plaintiffs were also interested in the question of women's employment. In the early part of 1912 Dr. Hamilton was interested in a scheme for starting nurseries employing women. She was introduced to the Locksheath Nurseries about this time, and the company needed money for further land. Dr. Hamilton and the other lady plaintiffs provided £2,000, but the scheme of land-purchase fell through, and from what he (counsel) could gather the £2,000 went to discharge the liabilities of the company which had not been disclosed to plaintiffs. Each side blamed the other for the failure of the land-purchase scheme. Dr. Hamilton's idea was that girls should be trained at Studley and transferred to nurseries at Hook Park, a proposed undertaking to be associated with Locksheath.

After some discussion Mrs. Atkinson and her husband had a consultation with the other side, and Mr. Hughes announced that he had proposed that judgment should be entered against the company for £2,000, together with 4 per cent. interest and costs, with an order for rectification of the register of the company. All charges of fraud to be withdrawn.

Mr. Atkinson, as the only director present, said he thought he had authority to consent, but he asked for a few days in order to consult the Board. His lordship allowed the case to stand over accordingly.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending November 11.

An Exceptionally Warm Week for the Time of Year.—This was the fourth unseasonably warm week we have had in succession. The days of the past week were all very warm, and also, with two exceptions, the nights. Even on those two nights the exposed thermometer registered respectively only 3° and 4° of frost. The ground is at the present time as much as 4° warmer at 2 feet deep, and 5° warmer at 1 foot deep, than is seasonable. Rain fell on two days, but to the total depth of only about ¼ inch. Only a few drops of rainwater are now coming through the bare soil percolation gauge each day, and there has been still none at all through the gauge on which short grass is growing. The sun shone on an average for 2 hours 35 minutes a day, which is half an hour a day longer than is usual at the same period in November. On the first four days of the week light airs and calms alone prevailed, but the past few days have been more or less windy, and on the morning of the 11th the highest velocity in any hour reached sixteen miles—by no means a high wind for November. To show how remarkably calm the weather has been for some time past it may be stated that we have to go back nearly two months in order to find even as high a wind as that. There was again a seasonable amount of moisture in the air at three o'clock in the afternoon. *E. M., Berkhamsted, November 11, 1914.*

ANSWERS TO CORRESPONDENTS.

Apples Diseased: *T. L.* Your Apples are affected by the disease known as Bitter-pit, for which neither cure nor means of prevention is known.

Cineraria Roots Decayed: *A. J. C.* The cuttings selected for the Cinerarias were too woody, and consequently formed a callus instead of roots.

Hollyhock Disease: *Reader.* The best preventive is to spray the plants with the Bordeaux mixture, and good results have also been obtained from spraying with Condy's Fluid. Many cultivators who find difficulty in growing Hollyhocks find it useful to sow seeds early in February, in heat, and treat the plants as annuals. A good book for your purpose is *Chemistry of the Garden*, by Herbert H. Cousins, M.A., 1s. 1½d. post free from the publisher of this journal.

Lawn for Games: *W. J. S.* 1, In favourable situations it is possible that a lawn sown in August would be fit for playing on in the June following. The play, however, should not be of a vigorous nature until the surface becomes firm and the grasses thick in growth. It is usual, but not essential, to mix fine leaved perennial Rye Grass in lawn seeds. It is purely a matter of cost. State your requirements to a firm who specialise in grass seeds. For very fine lawns and bowling greens we would not advise the use of Rye Grass.

Muscat Vines: *F. H. C.* Your Muscat Vines are not worth retaining, and unless you alter your practice radically you will not succeed with new ones. Roots will not grow in such a compost as you describe. Fowl manure is very strong and should only be used in small quantities, and as you applied cow manure in addition, the evil was aggravated. As one-third of the compost consisted of old mortar, there was no reason for adding slaked lime to the fresh soil. You do not state the quantities of magnesia or of iron you used, but either of these substances applied in excess would be injurious. We advise you to make new border and plant young Vines. If your loam is very heavy and liable to bind together mix plenty of old mortar with it and a good quantity of wood ash, burnt vegetable rubbish or even burnt soil, but if it is of medium quality a less quantity of old mortar should be used. No animal manure will be required during the first two years if the loam contains plenty of fibre, but if deficient in fibre a little half-decayed stable manure may be mixed with it for the purpose of supplying humus. Nothing else excepting bone dust, at the rate of one cwt. to five cartloads of compost, will be required. As soon as the Vines produce a good crop and are not too vigorous stimulants may be added as surface dressings.

Names of Plants: *N. B.* No. 1, Vinca rosea var. alba; 2, Pteris longifolia; 3, Polygonum polystachyum; 4, P. cuspidatum; 5, Selaginella involvens var. variegata; 6, Nephrolepis Piersonii; 7, Fuchsia triphylla.—*G. F.* 1, Heliotropium europaeum; 2, Berberis cretica; 3, Centaurea Behen var.; 4, Teucrium canum; 5, Asperula graveolens; 6, Anthemis tricolor. — *M. A.* 1, Please send a more complete specimen; 2, Myrtus Ugni; 3, Carpentaria californica; 4, Salvia species (flowers required for name); 5, Olearia insignis; 6, Abelia floribunda; 7, Elaeagnus pungens Simonii variegata; 8, Skimmia japonica.—*F. S.* Afzelia quanzensis.—*A. R. T.* 1, Pseudotsuga Douglasii; 2, Cupressus pisifera; 3, Cupressus pisifera var. aurea; 4, Spiraea Thunbergii; 5, Thuya plicata (Lobbii); 6, Cupressus Lawsoniana; 7, Thuya orientalis var.—*S., Cardiff.* 1, Isoloma hirsutum; 2, Sempervivum arboreum variegatum; 3, Sparmannia africana; 4, Plumbago capensis; 5, Trachelium coeruleum; 6 and 7, apparently forms of Centaurea rutifolia or Senecio Cineraria, but the species cannot be identified in the absence of flowers. —*C. F. S.* Laelia Sidneyana, raised by the late Mr. Tracy between Laelia cinnabarina and Laelia Jongheana (see *Gardeners' Chronicle*, November, 1907, p. 230).—*Holmwood.* 1, Cyrtomium falcatum; 2, Cyperus laxus; 3, Pteris tremula; 4, Asplenium Filix fœmina var. corymbiferum; 5, Dracaena indivisa; 6, Cyperus alternifolium; 7, Escallonia rubra.—*G. H. L.* 1, Ruellia macrantha; 2, Pittosporum Tobira; 3, Benthamia fragifera.

Rust on Fern: *X. Y. Z.* There is no disease present on the Fern. The brown patches are caused by the presence of too much moisture on the fronds.

Seed Guarantees: *W. J. S.* Few seed firms give guarantees of purity of grass seeds nowadays, when claims for compensation are so readily made. It is a matter for arrangement between buyer and seller.

Silver-leaf on Nectarine: *A. E., Norfolk.* Silver-leaf is present on the specimen received, but the disease is not very far advanced. Expose the roots and cover them with a mixture of soot and powdered sulphur before replacing the soil.

Sulphate of Ammonia as a Dressing for Lawns: *J. B.* Apply the manure at the rate of 2 ozs. per square yard. It would be best to wait until the spring before applying the quick-acting nitrogenous manure.

Tennis Court in Hard Blaes: *P. and Co.* If the soil is of a sandy or gravelly nature draining may not be necessary; but if drains are required employ 2½ inch agricultural tiles at 9 or 10 feet centres to the main drains, 4 inch field pipes at the sides. At the bottom place a layer of stone shivers, rough engine ashes, or gravel, whichever is available, to a depth of 4 inches, carefully levelling and rolling the same. Place a layer of finer ashes 2 inches deep over this, carefully level the same and roll all firmly. Next employ a layer of fine blaes ½ inch to ⅜ inch to a depth of 1 inch. If broken brick is procurable more cheaply than the blaes it could be substituted. Again roll the materials firmly, then arrange a thin layer of fine ¼ inch blaes to a depth of ½ inch and carefully level, water, and roll the same. Finish with a coat of fine screened blaes or broken brick ⅛ inch size, level, water and roll. A good finishing material is Hart's fine brick and tile dust composition. The cost of a tennis court of this nature would vary from £70 to £100, according to circumstances. To make a tennis court with tar-macadam proceed as follows:—After the ground is levelled and consolidated fix a creosoted wooden border 3 inches by 1 inch around the area. At the bottom place a layer of broken stones or brick in 1½ inch and 2 inch sizes to a depth of 4 inches, blending the same with shivers or ashes; then roll thoroughly with a 10 or 15 cwt. roller. Place 1½ inch of tar-macadam in *two* layers; the first layer being composed of stone in 1½ inch and 1 inch sizes, thoroughly coated with standardised bituminous tar; the second layer to be composed of crushed limestones which will pass ⅜-inch screen and be caught in ¼-inch screen. The whole to be heated and mixed with bituminous tar. Roll each layer separately. From centre to sides it is necessary to have a camber of about 1-16 inch to ⅛ inch to the foot to allow of the surface water draining to the sides of the court. After the tar macadam has hardened for about a week it is advisable to paint it with a light coat of bituminous tar and dust the surface with limestone dust, which will fill up the interstices and leaves a surface practically impervious to water. The cost would vary from 2s. 6d. to 3s. per square yard. Messrs. W. G. Walker and Sons, Ayr, specialise in this work.

Vines Infested with Mealy Bug: *E. W. R.* The best method of destroying mealy bug on Vines is to fumigate the house with hydrocyanic gas at intervals of twenty-four hours (see *Gardeners' Chronicle*, July 25, p. 65). Or you may dress the Vines, after rubbing off the loose bark that affords hiding-places for the pest, with the following mixture:—One part coal tar and six parts clay; dry the clay and powder it so that it may be passed through a ¼-inch sieve. Work the tar and clay thoroughly together, adding sufficient boiling water to make the mixture of the consistency of paint. The "paint" should be smeared over the canes, filling all the crevices, but the buds must not be coated with it. Keep the mixture well stirred during the process of application.

Communications Received.—W. D. (thanks for 1s. 6d. for R.G.O.F. Box)—A. W. W.—J. A. M.—G. H. L.—W. P.—Miss Connor—W. M.—S. D. B.—W. F. G.—A. H.—F. S. S.—C. F. S.—W. E. P.—W. J. S.—J. T.—Cardiff—E. F.—A. R. T.—W. D. S.—G. H. H.—A. S. M.—F. W. G.—P. A.—A J. H.—C. W.—W. P.—W. C.—C. G. G.—L. J. C.—W. A. C.—W. I—E. A. B.—F. M. B.—E. J. & Sons—L. J. C.—E. M.—F. P. D.—D. B. A.—B. C.—A. E. S.—J. S.—H. Rabjohn, Holland.

THE
Gardeners' Chronicle
No. 1,456.—SATURDAY, NOVEMBER 21, 1914.

CONTENTS.

Agricultural Education Conference 340
Bacterised peat, grant for research in .. 340
Black spot in Roses .. 333
Chamberlain, the late Mr. Joseph, and Kew 340
Chemical manures required in Cyprus .. 340
Edinburgh Chrysanthemum Show 340
Edinburgh fruit and vegetable market .. 340
Flowers in season .. 340
Forest seeds, the collection and storage of 335
Gas tar as a specific for mealy bug 341
Glasgow afforestation scheme 340
Hemitelia capensis .. 338
"London Scottish" Regt., horticultural members of the 339
Mapledurham, Oxfordshire 334
National Botanic Garden of South Africa .. 338
Obituary—
  Bound, W. 346
  Cooke, M. C. 345
  Donaldson, Alexander 346
  Maycock, G. 346
Pathological Convention, the proposed .. 338
Potato Arran Chief .. 341
"Pour nos Amis français et belges" .. 344
Sedums, the misnaming of 334
Societies—
  Barry and District Chrysanthemum .. 343
  Birmingham Chrysanthemum 342
  British Mycological .. 343
  Coventry Chrysanthemum 343
  Liverpool Hort. .. 343
  National Chrys. .. 342
  Royal Horticultural .. 341
  Royal Society of Arts 340
  United Hort. Benefit & Provident .. 343
Unemployment, land cure for 340
Walnuts 340
War items 339
Week's work, the—
  Flower garden, the .. 337
  Fruits under glass .. 337
  Hardy fruit garden, the 337
  Kitchen garden, the .. 337
  Orchid houses, the .. 336
  Plants under glass .. 336

ILLUSTRATIONS.

Cooke, the late Dr. M. C., portrait of 346
Hemitelia capensis in the National Botanic Gardens of South Africa (Supplementary Illustration)
MacDonald, Colour-Sergeant H. G. F., portrait of .. 339
Mapledurham, views at 334, 335
Monro, Captain E. G., portrait of 339

A NEW WEAPON AGAINST BLACK SPOT IN ROSES.

ONLY those who have experienced a bad attack of this disease know how disastrous is the effect of the black spot fungus (Actinonema rosae) on the Rose. If the disease is at all advanced insecticides seem to be without any practical effect in staying its ravages, the reason probably being that the mycelium is at work inside the tissues of the leaf, and that the leaf, which soon falls, spreads the disease further by infecting the ground. If the attack is caught very early, before it is established, a thorough drenching of the plants and ground with lime-sulphur compound seems sometimes to stay the plague, but this is unsightly, for the deposit caused by the lime-sulphur will cling to the foliage in spite of the heaviest rain, and what is worse is that it is not always effectual. Probably it is only effective where growth of the fungus inside the leaf has not yet developed to any serious extent. Moreover, some of our most beautiful Roses, including particularly the Lyons Rose, some others of the Pernetian group, and White Maman Cochet, among the Teas, so readily fall a prey to this fell disease that it is most difficult to keep them free from its ravages, and a bed of Roses suffering from a bad attack in autumn, with scarcely a healthy leaf upon the plants, is truly a sad sight.

Practically the most effective, if not the only means of guarding against the recurrence of the disease when a bad attack has occurred has been the wholesale removal of the surface soil to a depth of about 3 inches, and its replacement by soil brought from an uninfected locality.

During the summer the disease is spread by means of spores with comparatively thin coats which are carried about by the wind, and speedily infect new areas. In the autumn, however, winter spores are produced. Groups of these winter-spores are contained in small globular receptacles (perithecia) with hard envelopes, which protect the spores during the rigours of winter. The perithecia fall to the ground, remain there during the winter, and burst in the spring or early summer, throwing out the spores which have been stored within them, according to some authorities, to so great a distance as 10 feet. These winter spores, having not only their own walls, but also the hard case to protect them, seem to be practically indestructible by ordinary fungicides, and hence winter spraying will produce but little effect upon them.

Now the removal of the surface soil, though a tolerably effectual remedy, is a most troublesome and laborious process, and moreover it is expensive, so that it is unlikely to be largely resorted to. I have, therefore, for many years been endeavouring to find some process of destroying the spores in the ground, so as to avoid being driven to this troublesome expedient. My first idea was to devise some method of boiling the surface soil by the use of a portable boiler, such as is used by caterers for large tea parties, but the difficulties in the way of this method were so great, and the area that could be dealt with at a time so small, that it had to be abandoned.

A recent article, however, in the *Journal* of the Royal Horticultural Society by Mr. H. E. Durham, has suggested to me exactly the weapon for which I was in search. He has entitled his article, "The Use of Explosives and the Blow Lamp in the Garden," and it is the latter part of the article, headed "The Plumber's Blow Lamp as a Garden Tool," for which I am grateful, and would express my acknowledgments.

At present, for working among Rose bushes, it seems to me that a fairly small-sized lamp is the most suitable, with a flame of 6 to 9 inches long. It is best to select a rather still day, and if possible a day when the soil is tolerably dry, and perhaps I may assume that the surface has been kept in a state of good cultivation by means of the hoe.

Then, having got the lamp well started, not always an easy thing to the inexperienced, we may select some small tool for moving the surface soil. Barr's Daffodil hoe is useful for the purpose, but a small hand-rake or a garden hoe with a short handle will do. A couple of garden forks for keeping the branches away from the place where the work is in progress are also convenient, at least where the trees are at all crowded.

The method of procedure is first of all to go over the surface of the soil with the lamp, being careful, of course, not to let the flame play on any part of the trees themselves. Next rake the soil into the spaces between the trees, and treat it again with the flame somewhat more thoroughly, raking it over the while, and finally spread the soil again, and run the lamp over it afresh. Incidentally, this method of treatment will be found to have a good effect in destroying weed seeds which have fallen on the soil. No doubt treatment of this kind ought to have some effect in destroying the mildew spores in the soil, and perhaps a few caterpillars and other noxious beasts, but I am not very hopeful that it will be likely to effect anything like a clearance of mildew from our gardens. Some time ago Mr. G. L. Paul told me he had noticed that in those parts of France where there were no hedges there was no mildew, while in those parts where hedges were grown it was as prevalent as it is with us. In a country like England, therefore, where hedges abound—and we need not regret it, even though we be rosarians—the final extinction of mildew on our Roses can scarcely be hoped for, unless we confine ourselves to mildew-proof varieties, such as Louise Catherine Breslau promises to be. We would do well, therefore, to resign ourselves to fighting mildew on our Roses by the means that have been found to be successful in the past, but possibly the process I have suggested may be of some effect in lessening, or at least retarding its onset.

Coming back to black spot, notwithstanding the lamp treatment, there remain three possible sources of infection to be considered. (1) Where plants have been attacked the soil surrounding the beds is sure to have caught some of the spores. If this happens to be gravel or pavement it may be treated with the lamp, which will at the same time act as a weed-killer. This is impossible if the beds are surrounded with grass, and some fungicide must be used: sulphate of iron and lime-sulphur seem the most promising. (2) The winter spores may find a hiding-place in the interstices and cracks in the bark and the axils of the leaves, and to guard against this a strong wash after pruning will be most likely to ensure success. (3) There remains the possibility that the mycelium may remain in the tissues of the plant more or less dormant during winter. I believe we cannot yet say with anything approaching accuracy whether this takes place or not, or, if it does occur, whether it is common or exceptional. Mycologists would greatly assist rosarians by making and publishing accurate anatomical examinations of these fungoid diseases, of which our present information rests more on conjecture than it should do. We have clearly much to learn in these matters before the royal road to success will reveal itself.

I can as yet offer no results of the treatment of fungoid disease by this new weapon, and my excuse for describing it at this length must rest on the fact that it is a method for which I have been long seeking, that it is fairly simple, and appears to me to lie on the right lines for progress.

In the early days of modern surgery the exclusion of disease germs was sought for by the free use of disinfectants, operations took place under a carbolic spray, and all sorts of germicides were employed But the great triumphs of modern surgery have been secured by aseptic rather than by antiseptic methods. So rosarians have begun by the copious use of all manner of fungicides, but they may ultimately find the true solution of their difficulties in preventing the access of disease rather than in trying to cure an epidemic that has developed. *White Rose.*

MAPLEDURHAM.

On the bank of the "silvery winding Thames," just across the ferry, close to Tilehurst railway station, is the "baronry" of Mapledurham, with its broad acres of pasture and its farms. Almost nestling under the mansion, complete with church, school, shops and even a tiny row of almshouses, the little village has lived its life for many hundreds of years. Although only a few miles away from the rapidly-growing town of Reading there are few places which have retained more of their isolation and remoteness than has this village.

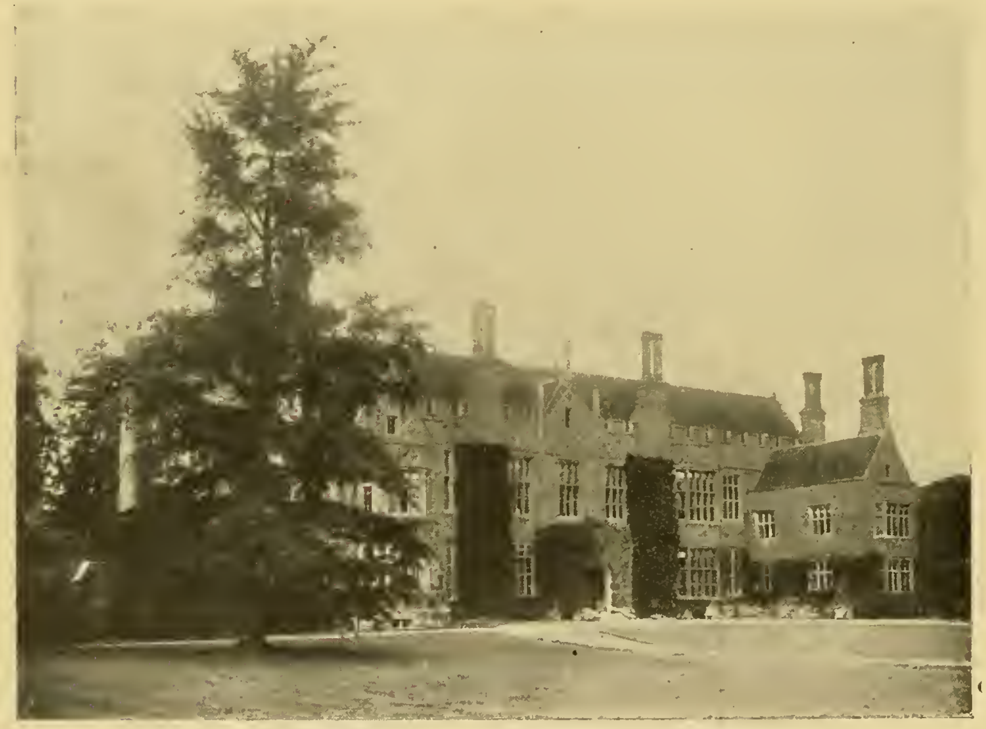


Fig. 131.—Mapledurham House, Oxfordshire: the south front.

Southwards it looks over the Thames to the high downs, and on the north it is sheltered by the high hills of Oxfordshire.

For over 400 years Mapledurham has been owned by the Blount family, and a portion of the house dates back to the thirteenth century. This part bears the imprint of its great age in the blackened Oak beams and the weather-worn bricks of the outer walls. But as it now stands the principal part of the residence—which, with the gardens and pleasure grounds, is rented by the Hon. Algernon H. Mills—is decidedly Elizabethan in character. The carriage front (see fig. 131) of the house is of the E shape which was often adopted in compliment to the Virgin Queen, and the house bears the elegant chimneys of the period. The pair of dark-green climbers which are so conspicuous in the picture of the house are Magnolia grandiflora, 38 feet high, and the gnarled old trunks measure 3 feet 6 inches across. Yet in spite of their undoubtedly great age these trees are full of vigour and bear numbers of large, fragrant blossoms right down to the paving of the terrace. The luxuriance of the Maidenhair Tree (Ginkgo biloba macrophylla) near the west corner is another instance of the great fertility of the Thames Valley soil, for it is 71 feet high with a girth of 7 feet 3 inches at 5 feet from the ground, and individual leaves averaging 3½ inches across. The date of planting is not known, but it is still growing vigorously, and there seems no reason why it should not exceed the 100 feet which is considered its limit in Japan.

From this position a mile-long avenue of Elm trees, in all the glory of their full maturity, carry the eye over the intervening country to the busy town of Reading. Elm trees at Mapledurham become very shapely specimens, and they grow luxuriantly without the exuberance displayed by these trees in the valleys of the neighbouring county of Buckinghamshire, where growth is so rampant that after the trees reach maturity their enormous branches become dangerous. At the time of my visit the Elm foliage was "touched with gold," and this, contrasting with the scarlet berries of groups of Thorns nestling below some isolated specimens, made an effective picture. The autumn colour of the Maidenhair Tree is generally also good, but the foliage of the Mapledurham example was still green. I have also noticed elsewhere that the variety macrophylla retains leaves later than the species.

In the flower garden at the eastern front of the house (see fig. 132) there is a Cedrus atlantica, quite 85 feet high and girthing 17 feet 3 inches at 5 feet up, which, had not it suffered in past years from snowstorms, would have been a magnificent specimen, and still compels admiration. Around and on the lawns adjoining the flower garden there are other trees of more than ordinary interest. The several examples of Canadian Hemlock (Tsuga canadensis), although not of record size, average 40 feet to 45 feet in height and are of the typical broadly-pyramidal outline, and, being well furnished with graceful, pleasant green foliage, are goodly to look upon. Near by some bushes of the common Barberry, thickly spangled with coral-red fruits, which gain in brilliancy from the dark-green Evergreen Oaks (Ilex fastigiata) behind, form as fascinating a shrubbery colour scheme as one would wish to see. A Horse Chestnut, planted long before the memory of living man, has made itself into a grove by layering its lower branches all round, where they have taken root and sprung up with a triple increase in girth measurement.

The Yew hedges are a notable feature at Mapledurham, where they are over 20 feet high, of rich green colour, and as dense as a stone wall. No one can say their age, but probably they were planted at the time the old red-brick walls were built around the kitchen garden, and these, judging by the nail marks, may be contemporary with the older portion of the house. There seems little doubt that the kitchen garden has been cropped for hundreds of years, and still there are no signs of the soil exhaustion which about a decade ago we were told was inevitable in old gardens. The fruit trees, culinary vegetables, and the flowers on the herbaceous borders, which beautify this part of the demesne, are as healthy and vigorous as could be wished for. Mr. D. Harris, who has long had charge of the gardens, is an expert cultivator. In August many of the outdoor Peaches were thickly studded with luscious-looking fruits, and the Apple and Pear trees also bore full complements. Bush fruits are grown equally well, and in the large quarter devoted to Black Currants no trace of the devastating "big bud" could be seen. This immunity Mr. Harris attributed to liberal culture and the free use of lime. The Hon. Mr. Mills takes a great pleasure in sending the large surplus quantity of fruit to various hospitals.

The largest and oldest kitchen garden, which is partly surrounded by the magnificent Yew hedges, is rendered very attractive by borders of herbaceous plants, which provide beauty and cut blooms for the greater part of the year. In the more recent addition a long walk bordered with clipped Lavender and sown with Mignonette leads on to the orchard and away to a newly-made Rose garden, where the beds are surfaced with Lavender, Pinks, and other fragrant plants. In this enclosure a fine Mountain Ash tree is a host to large clusters of Mistletoe.

In the flower garden (see fig. 132), whilst there is that plenty of colour which is demanded by the luxuriant foliage of the trees around, fragrance, which should always be an essential, especially in an old garden, is not overlooked, and one finds standard and dwarf Heliotropes, Stocks and scented-leaved Pelargoniums tastefully intermixed with the more showy tuberous Begonias, Antirrhinums and Zonal Pelargoniums. This past season Antirrhinum Sutton's Fire King has provided an especially charming effect. *A. C. B.*

THE MISNAMING OF SEDUMS.

If there is one genus of garden plants more than another of which the nomenclature is in a state of confusion it is surely the genus Sedum. Let me at once give a few examples to show what I mean. I have been collecting Sedums largely during the last year, and speak with feeling on the subject. Take the well-known Sedum reflexum, an extremely common plant in gardens. Among the specific names under which it has come to me are the following:—aureum, collinum, cruciatum, Forsterianum, grandiflorum, Hildebrandtii, hispanicum, ibericum, Jacquini, lividum, montanum, portulacoides, pruinatum, rupestre, Verloti, virens. Or, again, the well-known S. album masqueraded as Alberti, altissimum, asiaticum, Athoum, balticum, brevifolium, corsicum, debile, grandifolium, laconicum, longipes, Lydium, micranthum, murale, neglectum, virescens. To give one more example, S. Aizoon, a well-known old garden plant, arrived as aizoideum, Alberti, Brownii, Laggeri, mexicanum, Pittoni, Rhodiola, scabrum, Selskyanum, serotinum, spurium, stoloniferum, Wallichianum. A few of these have some justification, being synonyms or varietal names; but the bulk of them either belong to quite different species, or are imaginary names which belong to no described species at all. Conversely, the same name came from different sources, attached to a whole galaxy of different species. Thus, to quote one instance out of many, I have received eight different species as Selskyanum—not one of them being the true plant! A similar fate befell my search for the true euphorbioides, farinosum, japonicum, and pruinatum.

In many of the best of public and private collections the Sedums are to a remarkable extent either misnamed or not named at all. From one of the most famous of Continental botanic gardens I received, by favour of the director, a specimen of every Sedum grown there—112 in all; some forty of them misnamed. In a smaller collection representing the Sedums grown in the botanic garden of one of the most popular capitals in Europe, no less than half were wrongly labelled. As regards our British nurserymen, by whom Sedums are grown in large quantities, these plants are mostly sadly misnamed. Not that one can hold them to any great extent responsible for this. When they receive named plants wholesale from dealers or collectors who have a good reputation for correctness of nomenclature in other groups the names are naturally accepted. Few nurserymen have either the time or the opportunity for working out, from books or herbaria, the names of the plants which they receive—a process requiring critical knowledge and access to a good library. The nurserymen are, no doubt, as anxious to have their plants correctly named as are their customers. But the fact remains that the list of Sedums in many sale lists is far from representing the plants actually offered.

Now, the genus Sedum is not so difficult or complicated as to account for the present confusion. Most of the species are tolerably distinct and easy to recognise, more so, for instance, than the allied Saxifrages, which are so widely grown and are generally correctly named. And the mention of the Saxifrages suggests one possible explanation, namely, that, although much grown, the Sedums are not a fashionable group like the latter, and gardeners do not evince the same anxiety to get their correct names. As proof of which we may note the fact that some nurserymen in their catalogues merely quote Sedums "in variety" at so much per dozen without stating which species they offer. Another reason which conduces to confusion is the fact that some species are rapid growers, invade the territories of others, and thus the plants get mixed up. Sedums have the reputation of being incorrigible rampers, but, as a matter of fact, this quality belongs to quite a few species—album, acre, reflexum, rupestre, sexangulare, spurium, and perhaps a couple more. These either creep unduly, or, as in the case of reflexum and allied species, short shoots break off in autumn, get blown about, and commence growth on their own account in any crevice in which they may lodge. These pervading species have given a somewhat undeserved reputation to the genus. The remaining fifty or so species which are to be found in a good collection are mostly plants of exemplary behaviour.

The muddle as regards the Sedums is not altogether creditable to us gardeners and plant-lovers. The late Dr. Maxwell Masters realised this when he contributed to these pages, thirty-six years ago (1878) his excellent account of hardy Sedums, as then cultivated—a compilation which still remains the authoritative account of the genus as found in gardens. But his paper is now forgotten by most, and has naturally fallen somewhat out of date. I wish it were more freely accessible and more used.

Fig. 132.—View in the gardens at Mapledurham, Oxfordshire.

We are certainly in need of a fresh account of the cultivated Sedums, with as many illustrations as possible. Some of the species long grown in gardens have never been illustrated; of others the only figures are in foreign journals difficult to see in this country. But in the meantime, if I can help any of the readers of *The Gardeners' Chronicle* who are puzzled over their Sedums I shall be happy to do my best. Many species can be named without difficulty, even in their winter condition; others, of course, would need to be grown on and flowered. If sets of plants are sent to me numbered (a duplicate set being retained by the sender) I shall be glad to do my best with them. This offer is not inspired solely by philanthropy, for although I have in cultivation some 800 of these plants, representing about 150 species, I am still on the look-out for several species which I believe to be in cultivation, masquerading possibly under false names, so I may hope for occasional pickings from material received. Plants should be packed dry, and may be sent to me at Lisnamae, Rathgar, Dublin.

Before closing, one other instance may be quoted of the great confusion existing in the nomenclature of the Sedums. I refer to the prevalence in trade lists and in gardens of mere bogus specific names—that is, names which correspond to no described species. Among these nomina nuda are the following, under which plants have come to me:—aizoideum, blenastrum, Braunii, Comolli, crimealense, cruentum, eximeum, gemmiferum, grandiflorum, Hookeri, Laggeri, Lehmanni, Mangini, mirabile, Newcombii, Pittoni, testaceum, tomentosum, undulatum, Wallacei, Willisii. It would be a good thing if nurserymen and gardeners would combine to lay these ghosts. *R. Lloyd Praeger.*

THE COLLECTION AND STORAGE OF FOREST SEEDS.*

Up to the present time this country has been almost entirely dependent upon Continental firms for its supplies of tree seeds, and in addition very large quantities of seedlings and transplants have been obtained within recent years from the same sources. Owing, however, to the European war, adequate supplies of plants and seeds will probably not be available for several years. The expediency of collecting and storing our home seeds is therefore more urgent this year than previously. The present year gives every indication of being one of the best seed years on record. All proprietors of woodlands producing suitable seed are therefore urged to take this matter up as a national duty. The harvesting of tree seed is practically a new forest industry in this country, but for the following reasons it seems possible that it may become a more important one in the future. In the first place, there will be a rise in the price of seed because of the increased uncertainty of the supply and the difficulty of collection and storage. Secondly, as a subsidiary forest industry which can be profitably established, the harvesting of seed would provide additional local employment.

Source of Seed.—Experience has shown that this question is of the utmost importance in the formation of woodlands, and it is now recognised that sufficient consideration has not been given to it in the past. The localities from which seed of certain species should be obtained are, as a rule, determined by the predominance in them of that particular species. Extensive forest areas afford larger quantities of more reliable seed than small plantations or isolated trees. All diseased, dwarfed, or badly-shaped trees should be avoided in collection, while trees with a full crown development obtaining a large proportion of light should be selected. Trees in their prime (*i.e.*, when approaching the completion of their height growth) produce the greatest amount of fertile seed.

Time of Ripening.—Before any operations of collection commence the seed must be fully matured. Generally speaking, trees in this country ripen their seeds from June to December, depending to some extent on the season. Of our forest trees, the Elm produces ripe seed earlier in the season than the others: this it does in June. The mature seed falls at this time and should be sown immediately. During the months of August and September Birch and Alder fruit, the Birch seed falling at once, while that of the Alder is retained. From the end of September to November the seeds of Sycamore, Ash, Oak, and Beech mature and may be collected. The Larch, Douglas Fir, the Pines, Spruces, and Firs ripen their seeds during October and November.

Collection.—This important operation should be carried out under the supervision of the forester, so that suitable seed trees may be selected having a fair proportion of fertile seeds. In the case of broad-leaved species, two workmen climb the tree by means of ladders, collect the seed by hand, and transfer it to small bags attached round the waist. These bags are lowered by a string to the ground, where the seed is examined and an indication of its fertility obtained by cutting a number of the seeds open. If the sample is good all the available seed is collected from the tree.

---

* Board of Agriculture for Scotland Leaflet No. 21.

Coniferous seeds are in most cases collected in a similar manner to the above; the cones of Larch, Scots Pine, and Spruce are, however, often collected from felled trees immediately after they have been cut down.

Beech mast and acorns are usually brushed up from the ground, and occasionally Beech seed may be collected by spreading sheets underneath the trees.

Preliminary Storage and Extraction.—This applies mainly in the case of coniferous seeds, and is done to separate the seeds from the cone scales. The cones of Larch, Scots Pine, Spruce, and Douglas Fir require artificial heat to extract the seed. For this purpose the cones of these species are temporarily stored on perforated trays in a room or kiln kept at a temperature of 70° to 75° F. They remain there and are stirred occasionally until all the seed is extracted and sifted through the trays. In order to dislodge all the seeds from thin-scaled cones, such as Thuja and Cypress, the cones after collection are temporarily stored on a floor, and when completely dried the scales open sufficiently to liberate the seeds which are separated from the cones by means of sifting. The seed is extracted from Alder fruits in an exactly similar manner.

Permanent Storage.—Under normal conditions it is better to sow acorns, Beech mast, and Sycamore seed a few weeks after collection, except where there is danger of their being eaten by vermin during the winter. Where autumn sowing is not possible, and in the case of other broad-leaved species, the seed should be stored in a cool, well-aired loft. If seed has been collected wet, it should be spread out in thin layers and turned occasionally with a hayrake to prevent it heating. During winter there may be a danger of overdrying; this is indicated by the seed coat tending to shrivel. In such cases the seed should be covered with mats, straw, or moss. Ash and other seeds which "lie over" for a year are usually stored in a pit mixed with two or three times their bulk of sand, or they may be "stratified," *i.e.*, put between layers of straw in a trench and covered with soil. Throughout the dormant period the seed should be examined occasionally and turned with a spade. Coniferous seeds when cleaned are best put into sacks and hung from the rafters of a well-aired loft to prevent mice from damaging them. Large quantites of coniferous seeds can be spread upon the floors of lofts in fairly thick layers. They may require to be turned occasionally or covered according to atmospheric variations.

Testing.—It is recommended that average samples of about 4 ozs. of the various species should be submitted for examination to the Seed-Testing Station of the Board of Agriculture for Scotland. In this way reliable information will be obtained regarding the germinating power of the seeds of different species, which may be used as a guarantee in the sale of seed.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Phalaenopsis.—Certain species of Phalaenopsis, including P. amabilis, P. Schilleriana, P. Stuartiana, P. Sanderiana and P. leucorrhoda are on the point of flowering. The cultivation of these Orchids is not easy in winter, as the plants are subject to damping causing decay in the foliage. As excessive moisture is the principal cause of this trouble the atmosphere must not be too humid, nor must the roots be watered too freely. It is a good plan to examine the plants each morning with a view to moistening the compost if it has become dry, either by spraying or sprinkling with rainwater. The water should be slightly warmer than the atmosphere of the house, and care must be taken to wet any roots that are growing outside the pots. Water dripping from the roof-rafters is a danger that must be guarded against, and moisture must not be allowed to accumulate in the centre of the growths or in the leaf axils, but should be removed with a soft sponge. Do not allow the flower-spikes to remain for a long time on the plants after the blossoms have expanded, as this would exhaust the plants' energies. The spikes may be cut after a time and placed in water; the flowers will remain fresh for a long period. Let the plants be exposed to the light, but not direct sunshine, and this remark applies to the whole family at all times. Many of the green-leaved species, such as P. Lueddemanniana, P. violacea and P. speciosa, are growing actively and need plenty of moisture at the roots. Keep the atmosphere humid by damping the bare spaces wherever the conditions are favourable, and do this work sufficiently early in the day for the moisture to evaporate before the evening. The night temperature should be about 65°, and during the day it may be permitted to rise 5°. If the nights are very cold the temperature may be allowed to drop a little lower than 65° rather than having to employ excessive fire-heat; but at such times the amount of moisture in the atmosphere should be reduced. The house may be ventilated when the weather is favourable; but see that the plants are not exposed to draughts; there will be no danger from this trouble if the ventilators are opened on the side opposite to that from which the wind is blowing.

Miltonia.—M. candida, M. Clowesii, M. Bluntii and M. Regnelli should be grown in a light place in the intermediate house. During the winter the roots will require only sufficient moisture to keep the pseudo-bulbs plump. Examine the plants for the presence of scale and other insect pests; red spider may be troublesome if much fire-heat is employed. The use of an insecticide occasionally will suffice to keep the pests in check. M. vexillaria and its numerous hybrids are growing freely and the warm intermediate house is suitable for these plants, which require very little root-moisture just now, although a moist atmosphere is essential. For this reason the floors, staging, and other bare spaces should be damped each morning and early in the afternoons. Grow the plants in plenty of light. The young leaves frequently adhere together and need separating by means of a knife-handle or similar instrument. Fresh roots are developing, and the brown, decaying leaf-sheaths should be removed, as they might prevent the roots from reaching the potting compost. Thrips are a great pest of this Orchid, and measures must be taken to keep the plants clear of them. The plants may be sprayed with an insecticide, but this can only be done in fine, dry weather; perhaps a safer plan is to fumigate the house. M. Bleuana and hybrids that have been raised from M. Roezlii need a warmer house than M. vexillaria, and they will grow well under the same conditions as are afforded the warm-growing Cypripediums. The plants are in more or less active growth all through the year; therefore they must never be rested by withholding water; they need plenty of atmospheric moisture at all times. Thrips must be guarded against as in the case of M. vexillaria. The air of the house must be allowed to circulate, opening the ventilators for the purpose when the conditions permit.

SEED TABLE.

Name.	Time to		Depth to Cover. Inches.	Kind of Storage.
	Collect.	Sow.		
Alder (*Alnus glutinosa*)	Oct.	May	Less than ¼ inch	Cool and well aired.
Ash (*Fraxinus excelsior*)	Oct./Nov.	In Spring of second year	½ inch	Pit in sand.
Beech (*Fagus silvatica*)	Oct.	Nov. or May	½ ,,	Cool and well aired.
Birch (*Betula alba*)	Aug.	Immediately	Very light covering	—
Elm (*Ulmus montana*)	June	,,	¼ inch	—
Oak (*Quercus pedunculata* and *Q. sessiliflora*)	Oct /Nov.	Nov. or May	1 ,,	Cool and well aired.
Sycamore (*Acer pseudoplatanus*)	Oct.	,,	½ ,,	,, ,,
Larch (*Larix europaea* and *L. leptolepsis*)	Oct./Nov.	May	¼ ,,	,, ,,
Scots Pine (*Pinus sylvestris*)..	Nov./Dec.	,,	¼ ,,	,, ,,
Spruce (*Picea excelsa* and *P. sitchensis*) ..	Oct./Nov.	,,	¼ ,,	,, ,,
Silver Fir (*Abies pectinata*)	Oct./Nov.	,,	¼ ,,	,, ,,
Douglas Fir (*Pseudotsuga Douglasii*) ..	Oct./Nov.	,,	½ ,,	,, ,,
Cypress (*Chamaecyparis Lawsoniana*) ..	Sept./Oct.	,,	¼ ,,	,, ,,
Thuja (*Thuja plicata*)..	Sept./Oct.	,,	¼ ,,	,, ,,

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Cyclamen.—Remove the flowers from Cyclamen plants as they fade, detaching them by a sharp pull, for if they are cut off the portion of stem left will rot and damage the young flowers. The roots should be fed twice weekly with weak manure water, alternated with diluted liquid manure. Grow the plants in a temperature of 60° at night. Later batches may be top-dressed with a concentrated fertiliser mixed with fine soil. The early flowers of these later plants should not be allowed to develop for the present, and their removal should be continued until three weeks before the plants are required to bloom. Seeds may be sown now, and the seedlings allowed to remain in the seed-pan until next spring. If the plants are grown on without a check they will flower well in about fourteen months from the time of sowing.

Sweet Peas.—The plants for flowering next April and May under glass should be raised from seeds sown now, either in 4-inch pots with a view to transplanting them later, or in 6-inch pots, which will allow room for top-dressing. Use plenty of drainage, and mix only a little leaf-mould with the compost. About six or eight seeds may be placed in each pot and covered with soil to the depth of a quarter of an inch. Stand the pots in a closed frame and protect the seeds from mice. When the seedlings are about 2 inches high stand the pots on a shelf near to the roof-glass in a greenhouse and admit plenty of air. Place a few pieces of Birch in the pots to keep the shoots in position. The plants may be shifted into 9-inch pots in the spring, or they may be set then in a border. They grow best in a fairly heavy loam mixed with plenty of gritty matter. Make the soil firm at the time of planting.

Rhododendron indicum (syn. Azalea indica).—Well-budded plants of early-flowering varieties may be introduced into heat for blooming in the new year. Good varieties are Deutsche Perle (double white), Edmund Vervaene (double red), A. Borsig (double white), Hermosa (bright rose), and Fielder's White. If the leaves are infested with thrips or red spider dip the plants in a nicotine insecticide. Let the forcing be gradual at first, increasing the temperature until it reaches 65° at night. When water is necessary saturate the soil thoroughly and on occasions use liquid manure or soot water. A little dried blood sprinkled on the surface of the pots will act as a stimulant to the roots.

Bulbs.—Examine the stock of bulbs planted in ashes, and any that are ready transfer to a cool frame, where they should be kept in the dark for about a week and then gradually exposed to the light and air. Bulbs of Gladioli The Bride, Peach Blossom, Ackermann and Salmon Queen should be either potted or planted in a frame. Some of the bulbs may be set in the open border; these will provide a succession of blooms to those grown under glass. Examine Hyacinths in glasses with a view to replenishing water that has evaporated, but do not let the water reach quite to the bulbs. A few pieces of charcoal placed in the vessel will help to keep the water sweet. Grow the plants in the dark until plenty of roots have formed.

THE HARDY FRUIT GARDEN.

By J. G. WESTON, Gardener to Lady NORTHCOTE, Eastwell Park, Ashford, Kent.

PEACHES AND NECTARINES.—Whilst the cultivation of Peaches and Nectarines under glass has increased in recent years, fewer of these fruits are grown out-of-doors than formerly, although both trees crop well on sunny walls. The present is a suitable time to plant these trees out-of-doors, and the border should be well prepared for their reception. It is advisable to plant a few maiden trees each season, as when they are trained they will be useful for taking the places of any that have failed either out-of-doors or in the houses. Borders at the foot of warm walls are usually planted with early vegetables, and the ground is heavily manured for these crops; but it will be too rich for young Peach trees. Some special soil should therefore be prepared for the trees, and it may consist of fresh loam mixed with plenty of wood ash, lime rubble, and charcoal. Fresh animal manure should not be employed at this stage. The trees should be planted about 20 feet apart, but in the case of small trees there is little advantage in allowing so much space, especially as it is advantageous to lift healthy and well-growing trees every two or tree years to keep the roots under control. If it is preferred to plant the trees in their permanent positions at once the intervening space may be filled with cordon Pear or other fruit trees. The drainage of the border must be perfect, as it is essential that the soil should not be waterlogged. Before planting the trees examine the roots with a view to shortening any that are damaged and cutting back those of a gross nature, as this will tend to the production of fibrous roots. Make the soil solid under the ball of the tree, which should stand quite firm, and the roots spread out their full length. Work some of the finer soil amongst the roots at the different levels, and when the roots are sufficiently covered tread the soil firmly. The soil must be in a suitable condition for working—that is, neither too wet nor excessively dry—to ensure firm planting, which is essential for the production of firm, fruiting wood.

GLASS COPINGS.—In low-lying districts where spring frosts are destructive to vegetation glass copings are of great assistance in the successful cultivation of Peaches and Nectarines out-of-doors. They usually project about 3 feet from the top of the wall. Apart from the great benefit derived by the fruit, and the assistance afforded in the ripening of the wood in the autumn, copings are very useful in the spring to hang nets or blinds on to protect the blossom from frosts. It is a convenient time to fix copings to walls now that the trees are bare of leaves and before they are cleansed and trained.

FRUITS UNDER GLASS.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

PINEAPPLES.—Young plants for fruiting should be grown in a temperature of 65° during the winter, and water for the roots should be warmed to the same temperature as the house. Plunge the plants closer together than hitherto, but not so closely as to cause overcrowding. Continue to admit air freely according to the weather and the temperature of the pit. It is, however, better that the pit be a little below 65° rather than allow the atmosphere to become stagnant; but it is essential to close the ventilators sufficiently early in the afternoon for the temperature to reach the normal before nightfall. An application of water once in every six or seven days will suffice for the majority of the plants, choosing the forenoon of a bright day for watering. When deemed necessary the plants may be sprayed, but only very lightly; keep the atmosphere moist by means of evaporating troughs and damping the paths and brickwork of the house. In pits or heated frames where fermenting materials furnish the bottom heat, damping the bare surfaces will not be necessary, as sufficient moisture will arise from the bed.

SUCCESSIONAL PINES.—The materials of the hot-bed should be turned over from the bottom, observing the directions given in a former calendar. The plants should be examined carefully and any that require re-potting attended to. Disturb the ball of roots as little as possible in repotting. The more forward plants should be afforded a shift into larger pots. The temperature by fire-heat should be as near 60° as possible, allowing a rise of 5°, but no more, in bright weather; when the thermometer reaches above 65° fresh air must be admitted. As the winter advances root waterings should be less frequent, and much less in quantity, but the humidity of the atmosphere must be maintained by means of moisture from evaporating troughs. Air should be admitted regularly and freely in fine, open weather. The hot-beds in the fruiting pit may require turning or a portion of the exhausted materials may be removed and replaced by fresh dung and leaves. Examine the plants for re-potting, which should be done at once. Remove all dead or decaying leaves from the plants. Only sufficient moisture should be sprayed overhead to keep the plants free from dust. Water the roots sparingly, taking care not to saturate the soil or spill any moisture on the bed. The temperature should be kept as steady as possible and at the degree recommended for successional plants. Air should be admitted as circumstances permit, but rather employ fire-heat by day than allow the air to become stagnant.

TOMATOS.—Do not over-water the plants at any stage. Let the air circulate freely, ventilating whenever the weather is favourable. Remove all side growths as they appear, but do not restrict the main foliage, which, as a rule, is seldom over-luxuriant in winter. Fruiting plants should be fed from time to time, but not to excess. Feeding may take the form of a light top-dressing of loam or well decayed manure as the roots appear on the surface. The plants will grow steadily in a temperature of about 60°.

THE KITCHEN GARDEN.

By R. P. BROTHERSTON, Gardener to the Earl of HADDINGTON, Tyninghame, East Lothian.

SPINACH.—Late-sown seeds of most vegetables gave bad results this season, but none so bad as Spinach, and we shall have to depend solely on the August sowing, the plants of which grew much faster than usual. By means of careful picking the crop may last the winter. The younger leaves of curled Scotch Kale are valuable as a substitute for Spinach, and Lettuce also may be used for the same purpose. Should the weather be very wet or snow fall, it will be advantageous to clear every fifth or sixth row to form a path, so that the rows left can be reached to gather the leaves without treading the ground between them.

PEAS.—A sowing of Peas may be made now on a south or west border, setting the seeds thickly to allow of losses from mice and other disturbing causes. Rather cover the seed with a mound of soil than sow deeply, and choose a hardy variety, a round rather than a wrinkled sort. The practice of sowing Peas in November for early cropping is not nearly so common as it was forty years ago and more, most gardeners preferring to sow under glass in spring. But autumn or rather early winter sowing has the advantage, provided the plants escape loss, in that the plants give a larger crop and are less susceptible to dry weather, which is so harmful to glass-raised plants in May. Up to the date of writing we are still picking "Gladstone" Peas. But the plants are now almost leafless owing to rains.

TOMATOS.—It is no use attempting to winter young Tomato plants for early fruiting in any save a mild stove temperature. They are not required to make much growth and need only a very little water at root; over-watering and a high temperature would result in a soft growth, which is worthless for fruiting. Fruits not yet ripened on late plants will rot unless the temperature is about 60°. The foliage may be almost wholly removed, and all new growth as it appears should be rubbed off. It is astonishing how these late plants will finish their crops without any water at the roots and even swell late-set fruits to a fair size.

BROAD BEANS.—This is the usual time to sow for an early picking, though we have plants 6 inches tall already. The stems should be "earthed up," and the ground, if loose, pressed as firmly as possible. The seeds need not be nearly so far apart in the rows as for spring cropping, and unless in very heavy soil they should be buried deeper—say 6 inches or even more. Three inches apart is suitable, and if there are no losses in the winter, every other plant may be transplanted in February. Three feet between the rows is ample space, and when a few flowers have set the tips of the plants—or, at least, a fair number—should be removed to hasten the swelling of the Beans.

THE FLOWER GARDEN.

By W. CRUMP, Gardener to Earl BEAUCHAMP, K.C.M.G., Madresfield Court, Worcestershire.

ROSES.—Roses have flowered splendidly this autumn, and a list should be made of the best autumn-blooming varieties. As certain Roses do better in some districts than in others, the grower should test a number each year. The following varieties have given excellent results this autumn:—(Red) Richmond, General McArthur, and Ecarlate; (crimson) Château de Clos Vougeot, and George Dickson; (yellow or apricot) Duchess of Wellington, Lady Hillingdon, and Beauté de Lyon; (pink) Grand Duc Adolphe de Luxembourg, Caroline Testout, and Madame Abel Chatenay; (white) Lady Quartus Ewart and Frau Karl Druschki; (pale red) Caroline Testout, Mrs. Hunter, and Papa Gontier. The dwarf polyantha Roses are splendid for a variety of purposes, including bedding, and Jessie, Orleans Rose, and Mrs. W. H. Cutbush have been in bloom here all the summer.

PLANTING ROSES.—The ground for Roses should be well trenched and enriched with plenty of decayed manure, which should be placed well below the surface. If the soil is exhausted take out some from the bottom spit and replace with a quantity of rich, yellow, fibrous loam. In very clayey soils, old mortar rubble or charred earth, with a sprinkling of bone-meal, should be added. The roots of newly-planted Roses must not come in contact with animal manures, but be encouraged to grow near to the surface. It is best to delay the pruning of the plants until the spring, when one-half of the shoots may be shortened to two buds each and the remainder left half their length. It will be an advantage to plant before the end of November, as the soil is warm and roots will develop almost immediately, so that the plants will be re-established by the spring and thus have a great advantage over those set in the new year. Later, when severe frosts threaten, a light mulching of leaves, secured in position with a few evergreen branches, will serve to protect the roots from injury.

OSMANTHUS ILLICIFOLIUS.—The Osmanthus very much resembles the Holly, but the plant flowers in November and the blossoms are delightfully fragrant, a single plant scenting the whole neighbourhood. In planting this autumn the claims of this fine shrub should not be overlooked.

SHRUBBERIES.—Thickly-planted shrubberies have been almost abolished at Madresfield Court, for we hold that every tree or shrub should have sufficient room to develop to perfection. We prefer to plant shrubs in the turf where they give the best effect. Great masses of Laurel, Privet, Yew and similar plants are useful for screening unsightly objects, but they should not be permitted in the pleasure grounds as part of the general scheme of planting.

VIOLETS.—The plants of Princess of Wales and Marie Louise varieties should be lifted and planted on a gentle hot-bed in a frame. Runners should be removed and set in a cold frame, which should be kept closed until the plants are roofed These early runners will make the very best plants for setting-out next spring in readiness for forcing the following year.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS FOR THE ENSUING WEEK.

[In the following list of Appointments we have omitted the Chrysanthemum Shows which we have reason to know have been abandoned. It is possible that some of those enumerated may not be held, although we have no information to this effect.]

MONDAY, NOVEMBER 23—
Nat. Chrys. Soc. Executive Com. meet. Surveyors' Inst. meet. (Paper by Mr. Edwin Savill on "Our Wheat Supply," at 8 p.m.).

FRIDAY, NOVEMBER 27—
Dundee Chrys. Soc. Sh. (2 days).

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 41.9.

Actual Temperatures :—
London, *Wednesday*, November 18 (6 p.m.): 43°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London; *Thursday*, November 19 (10 a.m.): Bar. 29.9; Temp. 39°. Weather—Foggy.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Bulbs at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 11.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Perennials and Bulbs, at Stevens' Rooms, King Street, Covent Garden, at 12.30.

MONDAY—
Fruit Trees, Roses, Laurels, etc., 2 Greenhouses, Sheds and Sundries, at Cemetery Road Nursery, Hitchin, by Protheroe and Morris, at 12.

TUESDAY—
Fortieth Annual Sale of Nursery Stock, at Sunningdale Nurseries, Windlesham, by Protheroe and Morris, at 12.30.

WEDNESDAY—
Annual Sale of Fruit Trees, Roses, and other stock, at The Platt Nurseries, Borough Green, near Wrotham, by order of Mr. J. W. Todman, by Protheroe and Morris, at 11.30.
Bulbs, Roses, etc., at Protheroe and Morris's rooms, at 1.

THURSDAY AND FRIDAY—
Roses, Fruit Trees, etc., at Arthur's Bridge Nursery, Woking, by Protheroe and Morris, at 12.

THURSDAY—
Special Sale of Roses at Protheroe and Morris's rooms, at 1.

FRIDAY—
Herbaceous and Border Plants, Roses, etc., at Protheroe and Morris's rooms, at 12.30.

The Proposed Pathological Convention.

Those who have followed the course of negotiations with respect to the proposed Rome Phytopathological Convention will read with surprise and concern the references to the Convention in the Annual Report of the Horticulture Branch of the Board of Agriculture.

These references are two in number: one by the Assistant Secretary to the Board (Mr. T. H. Middleton), the other by Mr. A. G. L. Rogers, the head of the Horticulture Branch. In the former it is stated that "It is highly satisfactory, in view of all the circumstances, that the delegates agreed to recommend a Convention which, if generally adopted by the countries taking part in the Conference, should do much to check the spread of certain plant diseases without placing unreasonable restrictions on the trade. The Convention, which was recommended, was for those plants in which the nurseryman trades. . . . . If the proposed Convention is established, however, it may be hoped that at a later period, when experience of its working has been gained, it may be possible to deal with some of the more important field crops, such, for example, as Potatoes."

The reference made to the Rome Convention by the Head of the Horticulture Branch points out that adhesion to the Convention will entail the erection of at least one official station for scientific and technical research, the institution of a service of inspection of all nurseries, glass-houses, and other establishments offering plants for sale, the issue of certificates of health with consignments of plants for exportation, and the passing of such laws as would enable the Government to supervise disease, regulate the movements of plants, and punish offenders against the Convention. In return for this, plants, accompanied by a proper certificate, would be admitted into countries adhering to the Convention without the troublesome restrictions that are in force in many places. The Convention covers general nursery stock, flowering bulbs, and cut flowers. Now, it is a matter of common knowledge that, although the representatives of the Board of Agriculture signed the Convention, the Head of the Horticulture Branch, on his return from Rome, took steps to ascertain the views of horticultural traders with respect to the probable effect of the Convention on British trade. The subject was brought before a meeting of traders convened specially for the purpose, and as a result of that meeting a Joint Committee of the Royal Horticultural Society and the Horticultural Trades' Association was appointed to inquire into the wisdom of committing this country to the Convention.

That Committee met on several occasions, and gave careful consideration to the diverse problems raised by the proposal to commit this country to the Convention. The fact that the official representatives of this country, who signed the Convention at Rome, had little or no acquaintance with the nature, scope, or ramifications of our import and export trades made it all the more necessary for the Joint Committee to bestow careful thought on the possible effects of the Convention on the trade of this country. The Committee reached unanimously the conclusion that it could not recommend adhesion to the Rome Convention as it stands. It was willing to advise adhesion if "cut flowers" were excluded from the scope of the Convention, and if the importation of plants, bulbs, etc., from non-adhering countries was not prohibited.

The Joint Committee has received no official assurance that modification in this sense is possible, and, indeed, one of the two delegates to the Convention announced at the meeting already referred to that it was for the traders to accept or reject the Convention as it stood. If this be so, the recommendation of the Joint Committee amounts to definite advice to reject the Convention.

It is but fair, therefore, to ask whether the Board intends to act on the advice which it sought, or whether it means to adhere to a Convention which, in the opinion of competent authorities, is likely to damage seriously, and perhaps irreparably, the horticultural trade of this country! It should be observed, moreover, that the United States, one of our largest customers, has given no evidence of its intention to adhere to the Convention, and if it does not adhere, one of our chief reasons—if not our only valid reason—for ratifying the Convention disappears.

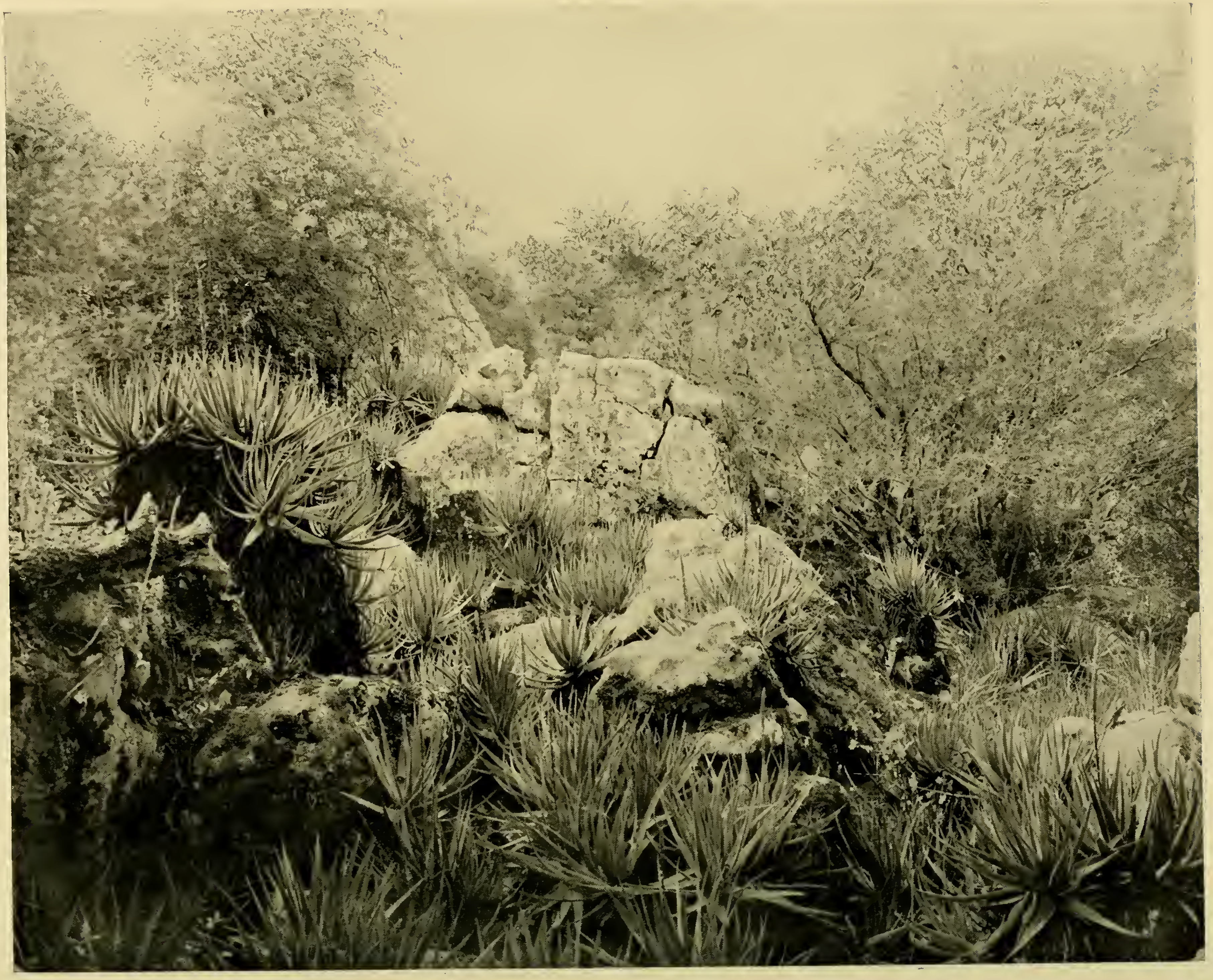
In the present state of European affairs, however, the urgency for taking a final decision no longer exists. We hope that the Joint Committee will continue its labours, so that when the establishment of a Convention again becomes imminent, that Committee may be able to save this country from being rushed into an agreement the effects of which on trade have not been envisaged.

Further, we hope ardently that if and when the time comes for the establishment of an official station for scientific and technical research in plant-pathology, this station will be, as should be all research stations, not an annex to a Government Department, but free and independent so far as its research activities are concerned.

Let the Board of Agriculture supply the funds by all means, and let it exercise such general control as it exerts over the special research stations, such as those at Cambridge, the Imperial Institute, and elsewhere. But let it be recognised that a research station in hierarchical subordination to the Board or a Branch of the Board will not attract able men, and, in the absence of the ablest, research is nothing but an expensive shibboleth. Research conceived and directed by Government officials is, has been, and will always be, ineffective. Agriculture has been spared, and we see no reason why horticulture should be menaced by such a visitation.

Our Supplementary Illustration.—A seventeenth-century map of the Cape Peninsula and adjoining country indicates that the site of what are now the National Botanic Gardens of South Africa was then covered partly or entirely by a forest "of ships' masts and heavy timber good for making wagon wheels and wagons." There is plenty of evidence that this valuable supply was freely used. And since the less serviceable woods were probably left untouched the proportions in which the various species are represented in the existing forests are certainly very different from what they were. A more reckless use of the axe in modern times, assisted by fires of frequent occurrence, has further reduced the area and modified the composition of the indigenous forest. But there are nevertheless still found in it certain well-defined associations which have been but little modified by human agency, except perhaps in their extent. One of these is represented in the accompanying Supplementary Illustration. This particular group of Hemitelia is situated about 900 feet above the sea, and is now about 1½ acres in extent. There is little doubt that it formerly extended much below its present limit, and there is reason to believe that many of the plants now in cultivation came originally from this locality. The soil is decomposed granite with a rich deposit of

Supplement to the "Gardeners' Chronicle."



Aloë succotrina in the Wild Reserve of the National Botanic Gardens, South Africa.

leaf-mould, and is kept moist by a series of weak but permanent springs. Hemitelia capensis is the only South African species of a widely-spread genus. The species itself apparently has an enormous range. In South Africa it is found in certain localities, mainly at higher elevations, throughout the coast belt from Natal to Table Mountain. It is also recorded from the Mascarene Islands and South America. Well-grown specimens attain a height of 10-12 feet. The remarkably slender stem and the wide-spreading crown of leaves each bearing at its base one or a pair of delicate filmy sprays which conceal the brown summit of the trunk, are characters which make this species conspicuous among tree ferns. It flourishes in that degree of shade which is afforded by small-leaved evergreen indigenous trees, including Podocarpus Thunbergii, Hook.; Canonia capensis, L. (a branch of which has fallen into a horizontal position across the picture); Myrsine melanophleos, R.Br. (sharply defined in the left upper corner); Olea laurifolia, Lam.; Curtisia faginea, Ait.; Ilex capensis, Harv. and Sond.; Helleria luvida; Ocotea bullata, E. Mey.; Plectronia ventosa, Linn., and others. *H. H. W. P.*

War Items.—Mr. David B. Kerr, of Messrs. Kerr and Co., seedsmen, Glasgow, at present a N.C.O. in the 5th Scottish Rifles (Territorials), has been gazetted First Lieutenant in Earl Kitchener's Army (2nd Glasgow Battalion Highland Light Infantry).

—— In *Gardeners' Chronicle* for October 31 last some particulars were given of certain French horticulturists. As supplementing this news to the particulars given in the letters from M. A. Truffaut and others, we now hear that M. Aug. Nonin has been severely tried by the demands for military service on the members of his family. His only son Henri, as already reported, was wounded early in September, and has been in hospital ever since. Although making good progress, as far as his injury is concerned, he has had the misfortune to contract typhoid fever. The latest advices received a week ago assure us that he is gradually recovering, and that he will probably have a three months' convalescent leave of absence to recuperate. M. Nonin's son-in-law, M. F. Olivet, after joining his regiment, is now at the front, and his nephew Emile, who recently joined, having been called to the colours as one of the 1914 class of recruits, is also with his regiment on active service. M. Gaston Clement has been home on a short furlough. A letter just to hand informs us that M. Philippe Rivoire, the secretary of the French Chysanthemum Society, was alive and in good health on the 10th inst. He is serving as a captain in the 115th Territorial Infantry Regiment, guarding the lines of communication, but may at any moment be ordered to the fighting line. Of many of our journalistic colleagues we have been unable to glean any tidings. No news is at present obtainable of our veteran friend, M. Lucien Chauré, editor of *Le Moniteur de l'Horticulture*; of M. Henri Martinet, editor of *Le Jardin*, or of M. Albert Maumené, editor of *La Vie à la Campagne*. Many other names occur to us of horticulturists whose fate causes no little anxiety. Among them those in and around Brussels and Ghent are probably safe, although shut off from the outer world. But there is M. Jules Closon, of Liége, and M. E. Mulnard, at Lille. At Bailleul, where there has been a good deal of fighting, are the Grapperies du Nord, belonging to M. Anatole Cordonnier, a fine establishment where choice fruits for the Paris market are grown to perfection. The battle of the Aisne has reminded us of M. Henri Fatzer, whose fruit-growing establishment at Quessy must have been in the thick of the fighting zone.

—— At the outbreak of the war, write Messrs. Sutton and Sons, the Royal Horticultural Society recommended that, in order to increase the food supply of this country during the autumn, winter and spring, seeds of certain types of vegetables should be sown at once. In this recommendation we quite concurred, and in order to demonstrate that the advice given was quite practicable we made sowings in our Reading Trial Grounds in August of the various subjects recommended, and it may interest your readers to know that we now have in condition fit for use the following:—Cabbage Lettuce, Cos Lettuce, salad Onions, Spinach, Spinach Beet, Cabbage Greens, Radishes, Turnips, Globe Beets, Carrots, Parsley, Potatos. In the agricultural section we advised the immediate sowing of:—Turnips, Cabbage, Kale, Rape, Mustard. These, also sown in August, have up to the present produced quite a considerable quantity of feeding material, and will continue to grow for some time. We may say that these results have been obtained notwithstanding the very dry weather which was experienced during August and September in this part of the country. Those who lived in districts where there was more rain after sowing may probably have obtained even better results than our own. At the Royal Horticultural Society's Hall, on Tuesday, November 17, we staged an exhibit of the produce of these trials.

CAPTAIN E. G. MONRO.

COLOUR-SERGEANT H. G. F. MACDONALD.

—— On Thursday last there was an enthusiastic recruiting meeting in the Floral Hall, Covent Garden Market. Mr. Henry Chaplin, M.P., presided. On the platform were Mr. Will Crooks, M.P., Mr. Robert Manuel, Mr. Geo. Monro, Mr. Michael Garcia, Mr. Seymour Lucas, R.A., Mr. Arthur Lucas, Mr. Frank Kitchener, and other gentlemen. There was a large attendance, the men being played into the hall by the two bands provided by the authorities. Lieut. Short, H.M. the King's Trumpeter, enlivened the proceedings with some excellent music. Messrs. Waring and Gillow decorated the platform with national flags. Mr. Chaplin impressed on the meeting how necessary it was to be prepared to resist possible invasion, and to support our Allies and restore plucky Belgium and her noble King to the position they honourably held before the Kaiser ruthlessly disregarded solemn treaty obligations and invaded them. Mr. Robert Manuel, who organised the meeting, appealed to the men of suitable age to offer themselves "here and now" as recruits. Some fifty did so, and they were played down to the head recruiting office in Whitehall.

The London Scottish.—Among those who took part in the famous attack made by the London Scottish are two well-known horticulturists—Captain E. G. Monro and Colour-Sergeant H. G. F. MacDonald, and we rejoice to learn that both went through the ordeal unscathed. Captain Monro, a son of Mr. George Monro, V.M.H., Covent Garden Market, who has been in the regiment for about twenty years and is a famous shot, has written home a graphic account of the engagement. The position attacked by the London Scottish was reached at eleven in the morning and held until seven at night, when it was attacked by an overwhelming force of the enemy. Throughout the night repeated attacks were made, and not until three o'clock in the morning was there any falling off in the severity of the attempts to break the line. The endurance of this regiment may be judged by the fact that from three a.m. on Saturday until three p.m. on Sunday it was marching and fighting. Colour-Sergeant MacDonald, lawn specialist, of Harpenden, has served in the Volunteers and Territorials for fourteen years. He is a member of the Horticultural Club, and the members of this body assembled at dinner on Tuesday last resolved to send him their congratulations and good wishes.

Royal Society of Arts.—The society's session commenced on Wednesday, the 18th inst., with an address from the chairman of the Council, Sir Thomas Holdich. Three of the papers to be read before Christmas deal with the chemical industries as affected by the war. The first of these is by Sir

William Tilden, on "The Supply of Chemicals to Britain and Her Dependencies" and the second by Dr. W. R. Ormandy, on "Britain and Germany in Relation to the Chemical Trade." Sir William Ramsay will preside at the first of these, and Lord Moulton at the second. The third paper is by Dr. Mollwo Perkin, on "The Indian Indigo Industry."

Southampton Royal Horticultural Society.—The following dates have been fixed provisionally for the society's exhibitions in 1915:—Rose Show, June 30; Carnation and Sweet Pea Show, July 20, 21; Autumn Show, November 2, 3.

Glasgow Afforestation Scheme.—In connection with the afforestation scheme of the Glasgow Corporation on the Ardgoil Estate in Argyllshire it is proposed to build cottages for the employees. A double cottage of the kind proposed will cost £500. Timber from the estate has been used for pitprops, of which there is a great scarcity at present.

"The Scottish Gardener."—An editorial announcement appearing in the current issue of the *Scottish Gardener and Northern Forester* indicates that on and after December 1 this journal will be amalgamated with the *Scottish Smallholder*. The latter journal will appear monthly, and the price will be maintained at one penny.

Glasgow Open Spaces Employees.—The Health Committee of the City of Glasgow has raised the wages of the caretakers of the open spaces in the city. Those who have had £1 per week have received an increase of 2s., and those above that sum 1s. per week.

Agricultural Education Conference.—The first meeting of the reconstituted Agricultural (previously Rural) Education Conference was held on Tuesday afternoon in Committee Room A of the House of Lords, Lord Barnard being in the chair. The Right Hon. Lord Lucas, president of the Board of Agriculture and Fisheries, explained the changes which had been made in the constitution of the Conference, and expressed appreciation of the valuable work performed by the first Conference. He also referred to the great assistance which the agricultural colleges and other organisations engaged in the work of agricultural education had rendered to agriculturists since the outbreak of war. The Conference appointed a committee, composed partly of its own members and partly of women co-opted for the special purpose, to consider the following reference received from the Board of Agriculture and Fisheries:—"To consider the provision made in England and Wales for the agricultural education of female students of sixteen years of age and upwards, and to report whether the existing facilities are sufficient, and if not, to what extent and in what directions these should be developed and improved."

Chemical Manures required in Cyprus.—The Chief Collector of Customs at Larnaca (the Board of Trade correspondent for Cyprus) reports that a local trader desires to receive quotations and samples from United Kingdom manufacturers of chemical manures, considerable quantities of which, it is stated, may be required in the island. United Kingdom manufacturers of chemical manures may obtain the name and address of the enquirer on application to the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London, E.C., but they should address any further communications to the Chief Collector of Customs, Larnaca.

The Surveyors' Institution.—The next ordinary general meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, the 23rd inst., when a paper will be read by Mr. Edwin Savill (member of Council) on "Our Wheat Supply." The chair will be taken at 8 o'clock.

Edinburgh Chrysanthemum Show.—Large numbers of visitors were present at this show, which was held in the Waverley Market, Edinburgh, on the 12th, 13th and 14th inst., and it is expected that a sum of between £250 and £300 will be handed to the Red Cross and Belgian Relief Funds from the profits.

Florist appointed Alderman.—Mr Lemuel Allen, buyer and manager of the floral department of Messrs. William Whiteley's, Limited, has been appointed to the aldermanic bench of Wimbledon. We learn from the local newspaper that Alderman Allen earned the honour by right of seniority as well as by good work done in connection with the local fire brigade and other municipal duties.

Grant for Research in Bacterised Peat.—As our readers are aware, Professor W. B. Bottomley, of King's College, London, has been working for some years on the bacterial treatment of peat. The results of the investigation have been described in this journal (see *Gardeners' Chronicle*, Vol. LV., pp. 204, 454), and in the *Proceedings* of the Royal Society and of the British Association for the Advancement of Science. The Board of Agriculture has made a grant of £150 to the Botanical Department of King's College "in aid of research on the subject of the probable accessory food-substances in humus and 'bacterised' peat," and in making the grant announce that reasonable facilities will be accorded to any accredited scientific worker who may desire to undertake investigations in connection with "bacterised" peat.

Publications Received.—***Gardening for Amateurs.*** Edited by H. H. Thomas. Part 18. (Cassell & Co., Ltd.) 7d. net.—***Sweet Peas for Profit.*** By J. Harrison Dick. (A. T. De La Mare Printing and Publishing Co., Ltd., New York.) $1.50.—***The Tropical Agriculturist,*** September, 1914. (H. W. Cave and Co.) Colombo.—***Journal of Genetics.*** Edited by W. Bateson and R. C. Punnett. October, 1914. (Cambridge University Press.) Price 10s.—***The War and the World's Wheat.*** By Alfred Akers. Simpkin, Marshall, Hamilton, Kent and Co., Ltd.) Price 3d.—***The Journal of Heredity,*** Vol. V., No. 11. November, 1914. (Organ of the American Genetic Association, 511, Eleventh Street, Northwest, Washington, D.C., for circulation among members only).—***The Forest Flora of New South Wales.*** By J. H. Maiden. Part LIV. (The Government of the State of New South Wales.) Price 1s.—***Register of Nurseries, Market Gardens, Farms, etc.,*** to be let or sold, November and December, 1914. (London: Protheroe and Morris.)—***Trees and Shrubs Hardy in the British Isles.*** By W. J. Bean. In two volumes. (London: John Murray.) Price 42s.—***Productive Orcharding.*** By Fred C. Sears, M.S. (Philadelphia and London: J. B. Lippencott Company.) Price 6s.—***The Garden Under Glass.*** By William F. Rowles. (Grant Richards, Ltd.) Price 6s.—***The Philippine Agricultural Review.*** September, 1914. (Philippine Islands: The Bureau of Agriculture, Manila.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Mr. Chamberlain and Kew.—Mr. Austen Chamberlain is not quite accurately informed as to the history of the completion of the Temperate House at Kew. Mr. Chamberlain wished to see this accomplished and Kew wanted to extend its cultivation under glass. The moment seemed favourable and I addressed a memorandum on the subject in the usual way to the Office of Works. The First Commissioner (now Lord Gladstone) approved the proposal, and caused an estimate for the erection of the South Wing to be included in the next year's estimates and submitted to the Treasury. It was agreed to in principle, but at the last moment the item was struck out by the Chancellor of the Exchequer, and the Office of Works informed me accordingly. I did not regard this as an abandonment of the project, but only a temporary postponement such as is not infrequent on financial grounds in official work, even in cases of necessity. Nor did I make any appeal to Mr. Chamberlain: that would have been quite irregular in a matter in the hands of a Minister of the Crown. Mr. Chamberlain acted independently, and happening to dine at the House of Commons with the Chancellor of the Exchequer, induced him to reverse his decision. The First Commissioner was dining at another table, and Sir William Harcourt authorised him verbally to have the work proceeded with at once. A supplementary estimate supplied the necessary funds. *W. T. Thiselton-Dyer.*

Flowers in Season.—Nerine Bowdenii is a great acquisition and seems able, if kept dry, to resist any ordinary frost. In the border in which it is growing seedling Gerberas have come up in abundance, and Thunbergia natalensis must really be much hardier than one imagines, for seeds have been jerked by the plant across the path and have rooted in a north border and come through the winter with no protection whatever. In the greenhouse we failed to get any seed from Primula malacoides, but some plants which were stood on a board in the path outside seeded freely on the path and in the border, and came through last winter where they stood with only a sheet of glass over them. Lobelia Tupa has flowered and seeded abundantly, and Acanthus Perringii has ripened one pod and set two more, but they are still green. *A. C. Bartholomew, Park House, Reading.*

Land Culture for Unemployed.—For many years I have been engaged at close quarters with unskilled labour on the land, and I do not think any good will come of discussing this question in your columns if the mind is biased. Is there need for land to be cultivated by unskilled labour? And if this is answered in the affirmative, is it possible to get better results from hand labour than can be got from land cultivated by the plough? I observe Mr. Cornish's remarks about backache and a slipshod way of work by spade labour, but the same remarks will apply to many in the craft, and I feel that such remarks are not conducive to solving the problem. One great secret in making unskilled labour either successful or a failure is the proper or improper oversight of whatever work is being done, and the interest or non-interest in these men and their work by the man or men who are in charge. I speak from experience when I state unreservedly that the employment of these men on land work can be either a success or a failure, just as the interest in them is one or the other. In all my dealings with this class of labour, it never was a question of getting so much done in a given time, but rather to do all I could in the best possible way, so that what was done was done properly. I cannot give details in a short letter, but I have proof of the value of land culture in times of national and local stress by unskilled, unemployed men. *V. H. Lucas, Outdoor Assistant Master and Head Gardener, Fir Vale Home, Sheffield.*

Walnuts.—It does not seem to be generally known that rooks are very fond of Walnuts. A friend of mine had a very large and fruitful Walnut tree in his garden, but could never get any ripe fruit, as the rooks came early in the morning and carried them away, and as the tree extended its roots for a considerable distance and starved the garden around it, he ultimatety cut it down. Last year during a short stay at Oxted, in September, I found under some Walnut trees in a coppice at the edge of a park, where there was a rookery, scores of green Walnuts that had been pecked and the young seed eaten. The time chosen appears to be before the endocarp is hard, but when the seed is no longer in the gelatinous state, but tolerably firm and white. *E. M. Holmes.*

Edinburgh Fruit and Vegetable Market.—Mr. King's letter to the *Scotsman*, quoted by you on p. 326, is apt to be misleading. The object of the new Wholesale Fruit and Vegetable Market on the proposed site is to develop the trade by providing ample space for all the wholesale fruit merchants at present in their cramped premises in Market Street, where Mr. King admits more business is done than formerly, whilst less is transacted in the Waverley Market. The longer the time of bringing about the much-needed alteration the less value the Waverley Market will be to the wholesale fruit merchants. In fact, at the last annual gathering of Messrs. Jas. Lindsay and Sons, Ltd., Mr. Cunningham, who presided, stated that the Waverley Market was becoming of less consequence to them as a business centre. As to those who favour the change not being in touch or using the Waverley Market at present, it may be interesting to mention that five out of the ten wholesale fruit merchants in Market Street and quite a large number of the stance-holders in the Waverley Market favour the proposal on condition that the new market is made suitable for both the market gardeners and wholesale fruit merchants. Mr. King, being a florist, is perhaps not aware that the Glasgow trade is not what it used to be. At present, Forced Rhubarb, instead of being sent from Edinburgh, is sent from Glasgow to Edinburgh, as the farmers round Glasgow, having a larger rainfall, are better able to produce forcing roots than the highly-rented market gardeners near Edinburgh. The same can be said of Savoys, Cabbage (except the early spring crop), Turnips, Lettuce and other crops. The Edinburgh market growers have been increasing their acreage, consequently they have a large surplus, which Glasgow does not require, and to get rid of this surplus is the problem. The only way is by either growing less or finding new customers. To grow less would be a backward step. New customers can be got if the goods are properly handled and placed on the market with the minimum of expense. In the leading article of last week's *Gardeners' Chronicle* on "Greenhouse Construction," the very first paragraph deals with the question of location, which must, if at all possible, include a railway siding, doing away with all handling of fuel by hand If that is necessary in the growing of produce, surely in disposing of it railway facilities and conveying devices of all kinds are even more essential, as the destruction often caused by rough usage to many of the better-class fruits and vegetables is detrimental to their commanding a good price. Why, even the shippers of coarse Bananas from Central America have conveyers from the quay right into the hold of the vessels, so that from 70,000 to 80,000 bunches can be stowed away within twelve hours. The ship's crew is not allowed ashore, as it sails the moment the cargo is on board. It will be possible to deal with all the railway traffic underneath the new market—a very important matter. During the Strawberry season, for instance, instead of carting all the chips, the railway vans can be run right into the wholesale warehouses. The change from the present market would be nothing like the one proposed by Mr. King at the Canal Basin, over a mile away. There is not a site in any of the cities I know of to compare with this of the proposed new market, as the plans show three floors below the market level and plenty of space for storage of empties, with room for future development. *James W. Scarlett, Sweethope, Inveresk.*

Potato Arran Chief.—In Mr. Brotherston's note on "Seed Potatos," on p. 323, I observe he mentions "Aron Chief," which I presume is meant for "Arran Chief," as having yielded an enormous crop, but with much disease. This latter remark is unfortunate. I hoped this variety was as near immune from disease as it is possible for a Potato to be. I am glad our experience does not coincide with his. Here, in an abnormally wet season, it has been practically free from disease, and has yielded an enormous crop, quite three times heavier than either King Edward, Windsor Castle, or Up-to-Date varieties growing in exactly the same conditions yet showing considerable disease. Arran Chief is similar in appearance and flavour to Windsor Castle. It will be a great pity if Mr. Brotherston's experience is general, and it would be interesting to learn of other growers' opinions of this Potato. *Arthur J. Cobb, Duffryn Gardens, Cardiff.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 17.—The fortnightly meeting was held on Tuesday last in the Vincent Square Hall, Westminster. The exhibition was smaller than usual; Chrysanthemums were numerous, and a Gold Medal was awarded for a group of these flowers. Carnations, Begonias, shrubs in berry and Ferns were likewise presented for the inspection of the Floral Committee. This body granted three Awards of Merit, two to Chrysanthemums, and one to a variety of Perpetual-flowering Carnation.

The Orchid Committee recommended two Awards of Merit to novelties.

The Fruit and Vegetable Committee awarded Medals to three groups, but made no award to a new variety. The outstanding feature in this section was a collection of Leeks of superb quality from the gardens of the Hon. Vicary Gibbs.

At the 3 o'clock meeting in the lecture-room, an address on "Carnations in Pots" was delivered by Mr. W. Cutbush.

Floral Committee.

Present: H. B. May, Esq. (in the chair), Messrs. E. A. Bowles, W. J. Bean, John Green, F. W. Harvey, G. Reuthe, J. W. Moorman, C. R. Fielder, Chas. Blick, Thos. Stevenson, J. F. McLeod, W. Howe, J. Dickson, Chas. Dixon, A. Turner, J. T. Bennett-Poë, Chas. E. Pearson, E. H. Jenkins, W. B. Cranfield, J. W. Barr and J. Jennings.

AWARDS OF MERIT.

Chrysanthemum Meudon.—A large Japanese variety of rosy-mauve colour, with silvery reverse. The plants have a dwarf habit, producing the big, solid-looking blooms on stems 3 feet 6 inches high. Shown by Messrs. W. Wells and Co.

Chrysanthemum Sir Tony.—A small, single variety, of terra-cotta colour, with a narrow zone of yellow around the rich, golden-coloured disc. Shown by Messrs. W. J. James and Son, Farnham Royal.

Carnation Pink Sensation.—This fine Perpetual-flowering variety was raised in America. The blooms are 3½ inches across, and the calyx does not split, so that the flower retains its best form. A close inspection reveals a number of rosy-pink markings on the pink petals, but they are not sufficiently pronounced to class the flower as a "flaked." Shown by Messrs. W. Wells and Co.

GENERAL EXHIBITS.

Messrs. H. J. Jones, Ltd., Ryecroft Nurseries, Hither Green, Lewisham, exhibited the best collection of Chrysanthemums, and were awarded a Gold Medal. The blooms were arranged on two long tables facing each other, with large epergnes of big exhibition varieties at the back and rows of decorative and single varieties in front, the whole finished with a row of small Ferns. The following were the more notable of the larger blooms :—Mrs. R. C. Pulling (greenish yellow); Mrs. Tickle (rosy-mauve); Mrs. Howard Kinsey (white, flattish flower); Mrs. C. Edwards (white); Leslie (rosy-bronze and old gold reverse); Mrs. H. J. Stratton (rosy-pink); and Mrs. Gilbert Drabble (white). A vase of the yellow incurveds C. H. Curtis and Buttercup was especially pleasing. Of the singles, Buttercup, Lily Mann and Mabel Cooper were the pick of the varieties.

Messrs. W. Wells and Co., Ltd., Merstham, exhibited Chrysanthemums. Of the large Japanese blooms there were fine specimens of Queen Mary (white); W. Rigley, a new yellow variety of the Mrs. G. Drabble type; W. Turner (white); Meudon, which received an Award; General Smith-Dorrien, rosy terra-cotta colour, with old gold on the reverse of the florets; and Daily Mail (sulphur-yellow). Singles were also shown well, notably Mrs. Loo Thompson (sulphur-yellow) and Brightness (red, with a yellow zone around the disc). (Silver Banksian Medal.)

Messrs. J. Peed and Son, West Norwood, were awarded a Silver-gilt Banksian Medal for single Chrysanthemums. This was a very pretty exhibit, in which fine Codiaeums and Ferns were employed for relief to the beautiful vases of such fine varieties as Sir Walter Scott, Geoffrey Peed, Glorious, Mrs. Loo Thompson, Golden Mensa (all yellow varieties); Mrs. G. Gover (rosy-pink); Miss F. M. Bird (white); Joey Saunders (orange bronze); and Margaret de Quinsey (shell pink).

Messrs. Godfrey and Son, Exmouth, showed varieties of single Chrysanthemums, of which the more notable were Eldorado (yellow), Gold Cup, Golden Mensa, Miss Margaret Godfrey (bronzy-red), and Molly Godfrey (rose-pink). They also showed a new white market variety named Market Queen, an improved Niveum. (Bronze Flora Medal.)

G. W. Tyser, Esq., Oakfield, Mortimer (gr. Mr. Sherlock), showed blooms of incurved Chrysanthemums in exhibition boxes. There were good blooms of Mrs. J. Hygate (white), Calypso (bronze), Romance (yellow); Topaze Orientale (pale yellow), E. Thorpe (white), and others. (Bronze Flora Medal.)

Miss Baird, West Malvern (gr. Mr. Irving), was awarded a Bronze Banksian Medal for an exhibit of Chrysanthemums.

Messrs. Hill and Son, Edmonton, exhibited a large collection of exotic Ferns, for which a Silver-Gilt Banksian Medal was awarded. The plants were splendidly grown, and each was a fine specimen of its kind. The more notable were Polypodium corymbiferum ramosum, with deeply crested ends of the fronds; Davallia tenuifolia Veitchii, having very elegant light-coloured fronds with brown rachis; Adiantum scutum, a coloured Maidenhair; Gleichenia semi-vestita; Brainea insignis, the young fronds tinted brown, the others a deep green; Platycerium grande, Osmunda palustris, Nephrolepis Millsii, N. exaltata superba, Davallia ciliata, and Blechnum latifolium.

Messrs. H. B. May and Sons, The Nurseries, Edmonton, filled a table with indoor flowering plants and Ferns. Begonias, both the large-flowered winter-blooming varieties, and those of the Gloire de Lorraine type, were shown splendidly, and there were choice Cyclamens, Statice profusa, and Hydrangea Mme. Mouillère, arranged with densely plumose Nephrolepis, Adiantum farleyense gloriosum, which makes a beautiful subject for growing in small pots; Davallia Veitchii, D. brasiliensis, and others. There was also a batch of the pretty Saxifraga sarmentosa tricolor. (Silver Banksian Medal.)

Messrs. Stuart Low and Co., Enfield, showed many varieties of winter-flowering Begonias, Fascinator, Mrs. Heal, Scarlet Beauty, Emita, The Gem, Elatior, and others being all splendidly flowered; a batch of Cyclamens, another of Acacia platypteria, Statice imbricata, and Perpetual-flowering Carnations, which included a fine new pink variety, named Mrs. Mackay Edgar. (Silver-gilt Flora Medal.)

Mr. L. Russell, Richmond, showed berried Shrubs, Crataegus Pyracantha Laelandii, Skimmia japonica, Aucuba vera, Cotoneaster horizontalis, C. Simonsii, Hollies, Euonymus europaeus, and Pernettyas. (Silver Banksian Medal.)

Earl Brownlow, Ashridge, Kent (gr. Mr. Robertson), showed tall plants of winter-flowering Begonias, with fine healthy foliage and plenty of good flowers. (Bronze Banksian Medal.)

Carnations were shown by Messrs. W. Cutbush and Son, Highgate (Bronze Banksian Medal); Messrs. Allwood Bros., Wivelsfield, Haywards Heath (Bronze Flora Medal); The Misses Price and Fyfe, Birchgrove, East Grinstead, who also showed Chrysanthemums (Bronze Flora Medal); Mr. C. Engelmann, Saffron Walden (Silver Banksian Medal).

Messrs. Wills and Segar, South Kensington, were awarded a Bronze Banksian Medal for well-flowered Erica nivalis, E. hyemalis and Citrus sinensis, finely in fruit.

Messrs. Barr and Sons, King Street, Covent Garden, showed Galanthus Elwesii, Cyclamen neapolitanum, C. cilicium, Narcissus Bulbocodium (White Hoop Petticoat), Hellebores and hybrid Nerines.

Mr. Clarence Elliott, Stevenage, showed Alpines and dwarf Conifers.

Mr. G. Reuthe, Keston, Kent, exhibited Alpines for which a Bronze Banksian Medal was awarded.

Mr. J. J. Kettle, Corfe Mullen, Dorsetshire, again exhibited Violets (Bronze Banksian Medal).

Mr. Amos Perry, Enfield, exhibited hardy Ferns as at the last two meetings. (Bronze Banksian Medal.)

Orchid Committee.

Present: J. Gurney Fowler, Esq. (in the chair), and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, J. Wilson Potter, De B. Crawshay, W. Bolton, S. W. Flory, E. H. Davidson, A. Dye, J. E. Shill, H. J. Chapman, C. H. Curtis, W. H. Hatcher, J. Cypher, J. Charlesworth, W. Cobb, A. McBean, F. J. Haubury, F. M. Ogilvie, R. A. Rolfe, Sir Harry J. Veitch, and Sir Jeremiah Colman, Bart.

AWARDS RECOMMENDED.

Award of Merit.

Sophro-Cattleya November (*Cattleya Portia × Sophronitis grandiflora*), from J. Gurney Fowler, Esq., Brackenhurst, Pembury, Tunbridge Wells (gr. Mr. J. Davis). A very pretty hybrid with much of the form of flower of C. Portia (labiata × Bowringiana) and its free habit of growth. The flowers are of good shape; the ovate-oblong sepals and very much broader petals, bright rose-purple with a golden sheen imparted by the crystalline cells of the surface colour. Lip ovate, with the side lobes folded over the column, bright ruby red with chrome yellow disc.

Odontoglossum crispum Millie, from Messrs. Flory and Black, Orchid Nursery, Slough. The fact that a typical white O. crispum should get an Award of Merit in these times sufficiently proclaims its good qualities. The flowers were of the largest, of fine substance, white with a slight tinge of rose colour on the sepals, and a large sepia-brown blotch on the lip. The plant had just borne a very heavy seed-capsule; nevertheless, the restricted spike bore four flowers.

Certificate of Appreciation.

Calanthe Branchii (*Textori × Wm. Murray*), from C. J. Lucas, Esq., Warnham Court, Horsham. A very interesting cross between the Japanese representative of the evergreen Calanthe veratrifolia and the deciduous or Preptanthe section. The plant had the leafy habit of C. veratrifolia, but with slightly thickened stems. The inflorescence bore evidence of the tendency to follow each parent, it being erect, as in C. Textori, but drooping at the upper half, as in the other parent. The numerous flowers approached nearest to C. Wm. Murray in form and colour, being white with a lilac shade, lip tinged with rose, and with a purplish crest. The passing or older flowers took a yellowish shade, as in C. Textori.

Cultural Commendation.

To Mr. J. Davis (gr. to J. Gurney Fowler. Esq., Brackenhurst, Pembury), for a grand specimen of Odontoglossum Lambeauanum with a branched spike of fifty-three fine white and claret-red flowers.

GENERAL EXHIBITS.

Messrs. Charlesworth and Co., Haywards Heath, staged an effective group of finely-grown specimens, for which a Silver Flora Medal was awarded. A good selection of varieties of Miltonia St. Andre, M. Bleuana, chiefly white-petalled forms: Cattleya St. Gothard, C. Antiope and other Cattleyas; Laelio-Cattleya Black Prince and other showy Laelio-Cattleyas; the charming Odontoglossum eximium xanthotes and O. ardentissimum xanthotes, both white flowers with a few clear yellow spots; a selection of coloured Odontoglossums, Paphinia cristata and Brasso-Cattleya Rutherfordii were also noted.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Flora Medal for a good group of Cattleyas, etc., among which a pretty light-coloured C. Hardyana with nine flowers, some fine dark C. Fabia, and white-petalled forms were effective. Cattleya Rhoda was well represented, Odontonia MacNabiana, and O. Princess Marie Jose, the latter a pretty, new form of unrecorded parentage; Coelogyne Mooreana, Aërides Lawrenceae, with three spikes; the new Brasso-Cattleya Seaforth Highlander (B.-C. Mrs. J. Leemann × L.-C. Aphrodite), and a good selection of Odontoglossums and Odontiodae were also included.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Flora Medal for a group of showy species and hybrids. Three very finely-coloured Vanda coerulea, two good examples of the true Miltonia vexillaria Leopoldii, with bright rose-pink flowers having a rich crimson mask on the lip; a selection of Odontoglossums, including O. Graireanum, and some excellent forms of O. crispum; a grand variety of Vanda Sanderiana, with seven flowers, and some good Dendrobium Phalaenopsis were remarked.

Messrs. Jas. Cypher and Sons, Cheltenham, heralded the Cypripedium season with a good group of those favourite plants, which secured a Silver Flora Medal. A representative selection of the best form of C. insigne and C. Leeanum with their hybrids formed the chief display, and C. Thalia Mrs. Francis Wellesley, forms of C. Niobe, one with many well-coloured blooms; C. beechense, C. Elatior, C. Gaston Bultel, and C. Fulshawense were exceptionally good.

Sir Jeremiah Colman, Bart., Gatton Park, Reigate (gr. Mr. Collier), showed the Australian Dendrobium Tofftii, a near ally of the Philippine D. taurinum. It bore an erect inflorescence of three white flowers, marked on the twisted petals and lip with lilac colour.

Messrs. J. and A. McBean, Cooksbridge, showed their new Sophro-Cattleya Pearl (S.-C. Doris × C. Portia magnifica). The plant, which was a small one, bore two bright rosy-crimson flowers, with gold lines from the base of the lip.

Messrs. Hassall and Co., Southgate, showed Cattleya Moira magnifica (Mantinii × Fabia), a fine flower, which may be said to be an improvement on C. Mantinii in size, whilst it flowers at the dull season.

Messrs. Hassall and Co. also showed Laelio-Cattleya Nestor (C. Warscewiczii × L.-C. Ophir), with white sepals and petals and rose lip, and the yellow Cattleya Sylvia sulphurea.

Messrs. Flory and Black, Orchid Nursery, Slough, showed the fine original form of Zygo-Colax Veitchii.

John T. Bennett-Poe, Esq. (gr. Mr. Downes), showed a good rose-coloured form of Brasso-Cattleya Madame Chas. Maron.

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq. (in the chair), Messrs. W. Bates, Ed. Beckett, A. Grubb, A. W. Metcalfe, A. R. Allan, J. Davis, A. Bullock, Owen Thomas, J. Jacques, J. Harrison, Wm. Poupart, Geo. Woodward, Horace Wright, and James Vert.

The best exhibit of vegetables was shown by Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. Ed. Beckett), in a collection of Leeks. They were the finest Leeks we have seen for some long time, and well merited the Silver-gilt Knightian Medal awarded them. The varieties were Prizetaker, Royal Favourite, The Lyon, Ayton Castle, Improved Musselburgh, and Monstrous Carenton.

Messrs. Sutton and Sons, Reading, filled a large table with vegetables raised from seeds sown since the war commenced. There were Turnips, Beets, Kales, Lettuces, Spinach, Carrots, Potatos, Onions, Endive, Radishes, and Cabbages. The most noteworthy of the collection were the Potatos, which some considered would not repay for the trouble of sowing so late as August 20; but the tubers were excellent in quality and of fair size. Turnips were of full size, the best varieties being Red Globe, Golden Ball, and Green Top Six Weeks. A 1 Kale was excellent, and there were fine little Harbinger Cabbages. Several sorts of Lettuce were included, Golden Ball and the crisp, curly-leaved, winter-gathering, non-hearting varieties being the best. (Silver-gilt Banksian Medal.)

Lord Hillingdon, Hillingdon Court, Uxbridge (gr. Mr. A. R. Allan), showed splendid fruits of Pears Nouvelle Fulvie, Duchesse de Bordeaux, Beurré Dubuisson, and Danas Hovey. The committee was impressed with the excellence of their culture.

The Society exhibited from the Wisley Gardens Carrots, Beets and Turnips raised from seeds sown subsequent to the declaration of war. This exhibit and that of Messrs. Sutton afford a convincing and final answer to those critics who asserted that vegetable seed sown at so late a date could not yield good crops.

Messrs. Barr and Sons, King Street, Covent Garden, showed various Brassicas, for which a Silver Banksian Medal was awarded. The collection included Dwarf Green Curled Savoys, Miniature Red Cabbages, Brussels Sprouts, and varieties of Kales. Dwarf Purple Curled Kale was excellent, and the best of the green kinds was Paragon, which furnishes side sprouts after the head is cut. The hardy Russian Kale (Chou de Russie) has a striking appearance, the leaves being cut in a very ornamental manner. There were a number of coloured varieties, all of which possess good culinary qualities. (Silver Banksian Medal.)

NATIONAL CHRYSANTHEMUM.

November 16.—The Floral Committee met on this date in the Essex Hall, Strand. The following varieties were selected for awards:—

First-class Certificate.

General Smith-Dorrien (Japanese).—Flowers large, of a rosy-red colour, with a distinct chestnut shade in the young florets, and amber-coloured reverse; as this shade is well seen in the somewhat irregular fall of the florets it makes a very pleasing colour combination. Shown by Messrs. W. Wells and Co.

Molly Godfrey (Single).—A bright pink or rose-coloured variety, with flowers large in size and borne on long, graceful stems. Raised by Mr. W. J. Godfrey, Exmouth, and exhibited by Mr. T. Stevenson, Woburn Park Gardens, Addlestone.

Annie Walters (Single).—This is a large yellow single resembling December Gold in colour, but not so refined in appearance as Golden Mensa or Glorious, although deeper in colour and larger in size. Shown by Mr. Philip Ladds.

Cards of Commendation.

Moncrieff (Single).—The petals of this variety are partly quilled at the base, forming a zone ½ inch in width outside the eye, which makes a very distinct and pleasing feature in a white variety.

Bronze Cheer, a market variety, received a card of commendation, as well as an award for colour, being a bright golden-bronze. The florets are notched at the ends, but even with this slight defect it should prove a fine mid-season variety for market purposes. Raised by Mr. Thorpe and exhibited by Mr. Philip Ladds.

The varieties Phyllis and Mr. A. S. Watt (the latter a reflexed sport from W. Turner) the Committee desired to see again.

PATRIOTIC FLOWER SHOW AT BIRMINGHAM.

November 4-5.—The Birmingham Chrysanthemum Society's great Chrysanthemum show having been abandoned owing to the war, the united Birmingham and District Horticultural Societies organised at very short notice a really attractive and very successful exhibition of fruit, flowers, and vegetables at the Birmingham Town Hall on the above dates, in aid of the Prince of Wales' National Relief Fund.

Nearly every one of the eighty or more exhibitors presented their produce to the Committee to be sold, and after working expenses have been paid there will be a profit of upwards of £120 to be handed to this Fund. No cash prizes or medals were offered, the awards consisting of diplomas only. In addition to exhibits from individual growers, there were eight collective displays from Horticultural Societies and Allotment Associations. In the case of these collective displays upwards of a hundred exhibitors were represented. The following awards were made, viz.:—Sixteen gold medal cards, 18 silver-gilt medal cards, 16 silver medal cards, three bronze medal cards, and 12 awards of merit. Tabling equivalent to about eight hundred feet run by four feet wide was provided for the exhibits, which occupied the whole of the floor area of the Town Hall, as well as the basement. Large as were the combined areas the space proved to be inadequate, as we observed exhibits packed away under the stages owing to the non-elasticity of the Town Hall walls.

The exhibits were arranged under six heads, viz. :—(1) Trade, (2) Gentlemen's Gardeners, (3) Amateurs, (4) Cottagers and Allotment Holders, (5) Collective Exhibits by Horticultural Societies, and (6) Collective Exhibits by Allotment Associations and Garden Clubs.

Artistes from the Birmingham theatres, the City organist, the Birmingham Police Band, the Stirchley Co-operative Choral Society, Mr. Wassell's Male Voice Choir, Mrs. Bowen Vincent, and Miss Beatrice Vernon's Concert Parties all gave their services willingly. The great success of this patriotic flower show is largely due to the untiring efforts of Mr. Walter G. Griffith, Mr. E. H. Weaver, and the general secretary, Mr. W. G. Carradine. The staging arrangements were ably carried out by Mr. C. H. Herbert, and met with general approval. The Birmingham Chrysanthemum Society lent staging and baize, and Mr. Riley provided hundreds of plates, free of charge, for fruit.

The show was formally opened by Lady Lodge.

The principal Chrysanthemum displays came from Messrs. Godfrey and Son, Exmouth; Messrs. H. Woolman and Son, Shirley; Messrs. W. Wells and Co., Merstham; Messrs. Barnes, Great Malvern; and Mr. W. H. Dyer, Northfield.

Miscellaneous exhibits were sent by Messrs. Gunn and Sons, Olton (Roses, beautifully arranged); W. A. Cadbury, Esq., Wast Hills, King's Norton (gr. Mr. H. Bick) (Apples and bottled fruit); Messrs. James Randall and Sons, Shirley (Carnations); T. Guy, Esq., Shirley (gr. Mr. W. Kemp) (large, shapely, well-flowered specimens of Begonia Gloire de Lorraine); A. Butler, Esq., Barnt Green (30 dishes of Apples); Viscount Cobham, Hagley Hall, Stourbridge (gr. Mr. D. R. Dixon) (30 dishes of fruit and a collection of Onions); Godfrey Nettlefold, Esq., Edgbaston (gr. Mr. J. S. Higley) (Begonias, Cyclamen, Primulas, and Grapes); Hugh Mitchell, Esq., Droitwich (gr. Mr. C. Crooks) (decorated fruit table); Edmund Allday, Esq., Solihull (30 dishes of Apples and Pears); Mr. H. N. Ellison, West Bromwich (Ferns); C. A. Palmer, Esq., Handsworth (gr. Mr. A. H. Ford) (Cypripediums, well-flowered, Begonias, Chrysanthemums, and Ferns); The Bournville Village Trust, Bournville (Conifers and miscellaneous hardy evergreen shrubs); Mr. Douglas Leigh, Hampton-in-Arden (hardy shrubs); Mr. Walter Jones, Shirley (Apples); Mr. W. Tolley, Beaucastle, Bewdley (Apples, etc.); Mrs. H. S. Batson, Handsworth (gr. Mr. E. Smallman) (pot Chrysanthemums, fruit and vegetables); Messrs. H. and J. Hughes, Water Orton (floral devices); Miss Deakin, Hay Mills (table decorations).

Vegetables were exhibited by Mr. George Baines, Hamstead; Mr. F. Anderson, Moseley; Mr. A. T. Rainbow, Northfield; Mr. E. Winchester, Rubery; Mr. H. G. Atkinson; Mr. H. R. Robinson; The Studley Horticultural College, Warwickshire. The last-named also sent Chrysanthemums and Grapes.

Collective exhibits were received from the following Horticultural Societies and Allotment Associations, viz. :—Sparkhill, Yardley Wood, Handsworth, Acock's Green, Small Heath, Bournville, and Municipal Employees.

BRITISH MYCOLOGICAL.

September 21-26.—The British Mycological Society held their eighteenth annual autumn foray at Doncaster from September 21 to September 26. There were only about a dozen members present, instead of the usual forty or more. The members met on the Monday and spent the evening talking of matters mycological and military. On Tuesday morning the foray was to the park and old grassland at Cusworth. The weather during summer and early autumn having been so dry, the number of specimens gathered was not at all high. The best finds were Collybia eriocephala, Pluteus villosus, Coprinus ephemerus, C. Friesii, Psathyrella subatrata, Psathyra bifrons, Corticum confluens, Clavaria persimilis, Corynella atrovirens, and Pseudopeziza Ranunculi. The business meeting was held in the evening. Mrs. Carleton Rea, who is well known for her remarkable series of water-colour drawings of the larger fungi, was chosen president for the coming year, Miss G. Lister again vice-president, and Mr. Carleton Rea continues 'as secretary and treasurer. The foray on Wednesday was to the Town Moor, Sandal Beat, and Wheatley Woods. The moor was too dry to yield any of the larger fungi. Sandal Beat gave Hygrophorus turundus and Polyporus adiposus, and Wheatley Woods, Amanita pantherina, A. spissa, and Russula nitida After the club dinner, Professor A. H. R. Buller, of Winnipeg, gave as his presidential address "The Fungus Lore of the Greeks and Romans." The various references to fungi in the old writers, such as Theophrastus, Dioscorides, and Pliny, and their quaint ideas as to their origin and uses, and the antidotes to be used against poisoning caused both interest and amusement. Thorne Moor was visited on Thursday. Unfortunately, the fungi found were not of the same interest as the moor itself, and only Lactarius vietus, Mycosphaerella Iridis, and Dasyscypha leuconica are worthy of record. In the evening Miss G. Lister read a paper on "Notes on Mycetozoa from Japan." The paper included some most delightful extracts from the graphic correspondence of the Japanese botanist, K. Minakata. Afterwards the president described the spore discharge in Puccinia graminis. The sporidia, which are produced on the sterigmata on the promycelium of the germinating teleutospore, are accompanied by a drop of water which is apparently concerned in some way with their discharge. The physiological process is similar in every way to that which takes place in the spore discharge in the Agaricaceae, upon which Professor Buller has made many observations. It may perhaps be regarded as another link between the Uredineae and true Basidiomycetes. The last foray was to Edlington Wood, situated on the magnesium limestone. Here were found Lepiota sistrata, Collybia vertirugis, Hygrophorus ceraceus, Poria eupora, and Leucoscypha nivea. Tricholoma psammopum, which is apparently new to the British flora, was also found. The final papers were by Dr. Bayliss Elliott, describing the conidia of Daldinia concentrica, found naturally, and by Professor Buller, who controverted many statements which have been made concerning the pseudorhiza of Coprinus macrorhizus. Saturday saw the break-up of a quiet but very pleasant meeting. It was appropriate that the president for the year should be from the Colonies. *J. R.*

BARRY AND DISTRICT CHRYSANTHEMUM.

November 7.—The annual Chrysanthemum Show fixed for November 4 and 5 was abandoned and an exhibition of fruit, flowers and vegetables was held in its place on the 7th inst. The whole of the receipts were given to the Prince of Wales' and Belgian Relief Funds, whilst some exhibits were sold in aid of these funds.

On each side of the platform were well-staged groups, shown by Mr. W. W. Lucas, Miskin Street, and Mr. S. Harford, Barry, respectively. In both groups were fine specimens of Japanese and single Chrysanthemums. Mr. Haines, Everard Street, Barry, exhibited a collection of cut blooms of exhibition varieties. Mr. S. T. Guy, Woodland Road, Barry, showed 10 vases of Chrysanthemums, 3 blooms in each vase, with fine specimens of Reg. Vallis and Bob Pulling. An interesting exhibit of large blooms, singles, pompons and two charming baskets of Chrysanthemums were shown by Mr. S. Woodford, Tynewydd, Barry. The finest collection of cut blooms was shown by Mr. T. Powell, Woodland Road, Barry, who exhibited 36 specimens. Border Chrysanthemums were shown by Councillor Beck, Mr. R. Powell and Mr. W. Ewens.

An outstanding exhibit of fruit was staged in the centre of the hall by Mr. A. J. Cobb, gardener to Reginald Cory, Esq., Duffryn. The fruit was arranged with Dahlias and Pampas Grass. About 100 dishes of Apples and Pears were shown, the latter including specimens of Pitmaston Duchess, weighing from 24 to 26 ounces each.

About 60 dishes of fruit were shown by Major-Gen. Lee (gr. Mr. Horne).

Vegetables were shown by Messrs. J. Collins, Cadoxton; and J. Mote, Cadoxton.

LIVERPOOL HORTICULTURAL.

November 11. — The annual competitive autumn show of this society was abandoned and an exhibition, at which the awards were all honorary, was held in its place. The proceeds of the show were given to the National Relief Fund, which benefited considerably, for the results were highly satisfactory. Honorary Awards of Gold Medals were made to Messrs. Stuart Low and Co., Enfield, for Carnations and Roses. Sir W. H. Tate, Bart., Woolton (gr. Mr. G. Haigh), who exhibited Chrysanthemums arranged with Palms and Ferns; Sir W. B. Forward, Bart., Bromborough Hall, Birkenhead (gr. Mr. P. Jakeman), who also exhibited Chrysanthemums; W. J. Lockett, Esq., Grassendale, who exhibited Chrysanthemums and fruit; G. Nicholson, Esq., Prince's Park, Liverpool (gr. Mr. P. Caunce), for vases of single Chrysanthemums; Messrs. Dickson and Robinson, Manchester, for a bank of decorative Chrysanthemums; Mr. J. Lee, Bebington, for a contribution of Apples and Pears staged in boxes and plates, and Messrs. R. P. Ker and Sons, Aigburth, for specimen Palms.

Silver Medals were awarded to the Countess of Sefton, Croxteth, West Derby (gr. Mr. J. Gibbins); the Earl of Lathom, Lathom, Ormskirk (gr. Mr. B. Ashton); and Messrs. Dicksons, Chester, all showing fruit; also to F. Findlay, Esq., Sefton Park; Lieut.-Col. J. B. Gaskell, Roseleigh, Woolton (gr. Mr. J. Stoney); T. Henshaw, Esq. (gr. Mr. J. George); Loo Thomson, Esq., Formby; Messrs. John Cowan and Co., Gateacre, for a bank of Orchids; Mr. C. A. Young, West Derby, for Carnations; J. E. Gordon, Esq., Chester (gr. Mr. W. Piper), for a collection of vegetables; Mr. R. Manson, Gateacre, for miscellaneous plants and bowls of bulbs; Miss G. Milne, Waterloo; Miss Newsome, Ormskirk; Messrs. Fishlock Bros., Liverpool; and Mrs. Stevenson, Liverpool, plants from a roof garden.

Auction sales were held at intervals, when the produce was sold rapidly at good prices.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

November 9.—The monthly meeting of this society was held at the R.H.S. Hall on November 9: Mr. Chas. H. Curtis presided. The sums of £28 17s. 9d., £13 0s. 4d., and £5 5s. 10d., respectively, were passed for payment to the nominees of three deceased members. The sick pay for the month on the ordinary side was £68 4s. 3d., and on the State side £34 14s. 4d., and maternity claims to £10 10s. The treasurer stated that the trustees had invested a further £400 on behalf of the society. The secretary reported that 75 members had joined His Majesty's Forces.

COVENTRY CHRYSANTHEMUM.

November 13 and 14.—This Society held a successful non-competitive exhibition on these dates on behalf of the Belgian Relief Fund, the annual show having been abandoned on account of the war. The exhibits were of excellent quality, and at the conclusion of the second day were sold in aid of the benevolent purpose referred to. The Society paid all the expenses, so that the whole of the proceeds were available for the Relief Fund. The donors of the exhibits included the Earl of Craven, Combe Abbey; Lord Leigh, Stoneleigh Abbey; Hugh Rotherham, Esq., Keresley Grange; C. Vernon Pugh Esq., Radford House; Walter Browett, Esq.; Alderman W. H. Batchelor; B. Tuke, Esq., Whitley; F. Foster, Esq.; F. Twist, Esq.; J. Powers, Esq.; W. Hillman, Esq.; S. Cash, Esq., and many others.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

NOUVELLES DES HORTICULTEURS FRANÇAIS.

Comme complément des renseignements fournis dans le *Gardeners' Chronicle* au sujet de nos amis du Continent, nous avons le plaisir de vous faire parvenir des nouvelles concernant des horticulteurs français des plus en vue.

M. Aug. Nonin, de même que notre vieil ami M. A. Truffaut, a plusieurs membres de sa famille sous les armes. Son fils unique Henri fut, comme on l'a relaté déjà, blessé au début de septembre. Depuis lors il est à l'hôpital. Il était en bonne voie de guérison lorsqu'il eut le malheur d'être atteint de la fiévre typhoïde. Les dernières nouvelles reçues à son sujet sont cependant très rassurantes. Le beau-fils de M. Nonin, M. F. Olivet, est au front et son neveu Emile vient d'être incorporé avec la classe de 1914.

Depuis notre dernier rapport, nous avons appris que M. Gaston Clément est en bonne santé.

Nous venons également de recevoir de bonnes nouvelles de M. Philippe Rivoire, secrétaire de la Société des Chrysanthèmistes français. Il est capitaine au 115ᵉ d'infanterie territoriale chargé jusqu'à présent de la garde des voies de communications, mais qui peut à tout moment être envoyé au front.

Il nous a été impossible d'apprendre quoi que ce soit de plusieurs collègues de la presse horticole, notamment du vétéran M. Lucien Chauré, rédacteur-en-chef du *Moniteur de l'Horticulture;* de M. Henri Martinet, rédacteur-en-chef du *Jardin;* de M. Albert Maumené, rédacteur-en-chef de *La Vie à la Campagne.*

Beaucoup d'autres noms nous viennent à l'esprit. Il y a lieu de croire que nos amis de Gand et de Bruxelles sont sains et saufs, bien que dans l'impossibilité de donner des nouvelles. Mais qu'est-il advenu de notre ami de Liége, M. Jules Closon, dont nous avions déjà le plaisir de faire la connaissance au jury de Gand en 1889 et que nous y rencontrions encore à la dernière quinquennale?

Que dire de l'horticulteur bien connu de Lille, M. E. Mulnard, de MM. An. Cordonnier et fils, les chefs des Grapperies du Nord, de Bailleul, où ont eu lieu des rencontres, et de M. Henri Fatzer, de Quessy, que les batailles de l'Aisne auront rappelé à tous les souvenirs. Toute nouvelle concernant ces messieurs serait reçue avec plaisir.

LA BELGIQUE SOUS LES ALLEMANDS.

UNE LETTRE DU REDACTEUR EN CHEF D'UN JOURNAL HORTICOLE BELGE.

(*Suite de la p. 329*).

Ailleurs ils enlèvent une vache valant 600 francs en échange d'un "bon" pour un poulet de 2 fr. 50. La moitié de la bête fut retrouvée plus tard derrière une haie, et déjà en pleine décomposition. Pour des réquisitions moins importantes, on se contentait tout simplement de remettre à l'intéressé un billet portant les mots "Gute Leute" (braves gens)!

Inutile de vous dire que les nombreuses serres à vignes de Hoeylaert ont reçu la visite de la soldatesque. Des centaines de kilogrammes de Raisins ont été volés, des milliers d'autres abîmés. L'esprit de destruction était tel que des hommes étaient porteurs de tiges entières chargées de Raisins, souvent complètement verts. L'un d'eux paya d'ailleurs sa gourmandise; pris de coliques, il fut transporté à l'hôpital, où il mourut la nuit même.

Les portes des maisons dont les occupants s'étaient enfuis, furent défoncées; toutes les valeurs, les comestibles et le linge disparurent, puis des tas de paille furent amenés dans les places et y étendus pour servir de couchette. Le lendemain, j'ai vu une de ces maisons; c'était vraiment une porcherie. Lorsqu'on se plaignait, un officier venait examiner l'état des lieux, puis, d'un air grave, inscrivait sur la porte ou le mur: "Bitte schonen"; "gute Leute"; "nicht brennen"; "nicht plundern." J'ai vu un concitoyen qui faisait à l'officier l'observation fort judicieuse: "Mais, monsieur, à quoi cela m'avance-t-il? Il ne reste rien à piller!"

Il est curieux de constater que partout où les Allemands ont passé, ils ont jugé utile de recourir à ces inscriptions. Faut-il en conclure que l'incendie et le pillage sont érigés en système et que seules les propriétés désignées doivent y échapper?

Après le 21 août, notre commune est rentrée dans le calme. Il y est arrivé bientôt une troupe de la "Landsturm" (300 hommes de 40 à 45 ans) chargée de la garde des voies de communication (la ligne de chemin de fer Bruxelles-Namur passe par Hoeylaert). Ils se sont retirés précipitamment le 20 Octobre, quand il s'est agi de renforcer l'aile droite allemande opérant en Flandre. Leur attitude fut généralement correcte. Il y avait certainement parmi eux des braves gens, mais aussi des bandits. Un jour l'un d'eux déclara en désignant son compagnon: "Cet homme est un misérable; il a tenu deux enfants au bout de sa baïonnette; nous ne devons pas, nous (Landsturm), aller au feu, mais si cela se présente, ma première balle sera pour lui!"

L'exemple du soldat blessé à Hoeylaert montre le crédit qu'il faut accorder aux prétendues provocations des civils. S'il y en eut, elles furent certainement très rares. En règle générale les incendies et les fusillades ont commencé à la suite de pillages ou de rixes sanglantes entre soldats. Des hommes ivres de vin se sont entretués ou ont abattu des officiers: la population a eu à payer la casse. J'ai visité Wavre, petite ville située à une distance de 9 milles dans la direction de Namur. Cinquante-six maisons y avaient été incendiées parce que, m'ont assuré des habitants dignes de foi, le cadavre d'un officier fut trouvé dans la rue. Après l'incendie, on obtint que le cadavre fût autopsié: on y découvrit tout simplement une balle allemande. *Hector Van Orshoven, agent technique à l'Office Horticole, Bruxelles, Rédacteur-en-Chef du* Tuinbode, *Belgique.*

(*A suivre.*)

M. Ambroise dont, suivant des renseignements venus de Belgique, nous avons annoncé la fin tragique à Waremme, était depuis de longues années attaché à l'école d'horticulture de l'Etat belge à Vilvorde. Il avait fait un séjour au Congo et était chargé du cours de cultures vivrières à la section coloniale de l'école de Vilvorde. Sa mort sera vivement regrettée dans le monde colonial belge, où M. Ambroise était très connu.

Le commandant Sohie.— Nous apprenons avec peine la mort du commandant Sohie, du génie belge, tué le 5 novembre dernier, au moment où, à la tête de sa compagnie, il jetait un pont sur la rivière près de Nieuport. Il était fils d'un des fondateurs de la célèbre firme Sohie frères, qui introduisit la culture commerciale du Raisin sous verre en Belgique, et cousin germain de M. Ernest Sohie, le chef actuel de la firme. Nous présentons à ce dernier nos condoléances bien sincères.

Personnalités agricoles et horticoles belges en Angleterre. — Nous apprenons que M. Leplae, directeur général de l'agriculture du Congo belge, est à Folkestone. M. Smeyers, directeur, id., réside à Cambridge; M. Wauters, professeur à l'école d'horticulture de Vilvorde, à Leslie (Fifeshire, Ecosse), Leslie House; M. Hegh, directeur de la *Revue Générale Agronomique*, à Ealing, London, 6, Egerton Gardens; M. Adriaensen, ingénieur agronome, à Swindon, Downside, Westlecot Road, 46; M. De Meyer, conseiller d'horticulture de l'Etat, à Folkestone, 149, Sandgate Road; M. Van Orshoven, agent technique à l'Office Horticole, à Londres, Tewkesbury Lodge, Honor Oak Road, Forest Hill, S.E.; M. Van Wijngaerden, conseiller horticole du Boerenbond belge, à Springfield, Chelmsford (Essex), White Hart Cottages.

Eau de Louvain.—Les journaux anglais commentent avec satisfaction la nouvelle dénomination de l'Eau de Cologne, adoptée par leurs confrères français. L'antique ville belge, qui gardera une juste célébrité par les sauvages dévastations commises sous le régime teuton, se rappellera donc aussi aux dames grâce à cette eau de . . . . Cologne (sera-ce encore du "made in Germany"?) Les horticulteurs eux, en passant à Louvain lorsque les temps seront meilleurs, ne manqueront pas d'aller admirer aux environs les magnifiques cultures de Choux-fleurs, qui nous l'espérons, reprendront toute leur splendeur. Chose curieuse sous un climat relativement peu favorable, la production des Choux-fleurs de Louvain commence dès les premiers jours de mai, bien qu'elle se fasse en plein air. Une grande partie de la récolte prenait le chemin de l'Allemagne.

Le Raisin belge et la Guerre.— Normalement les Belges vendent de grandes quantités de Raisins au marché de Covent Garden à Londres. Depuis le début de la guerre, la métropole anglaise ne'en avait plus vu. La semaine dernière le premier envoi y est arrivé. Il s'agissait de quelques caisses dans lesquelles chaque grappe avait été entourée de papier de soie et d'ouate. Cet envoi avait été conduit en voiture jusqu'en Hollande, où on l'avait chargé en destination de l'Angleterre. Malgré la qualité du produit, il n'a pu réaliser que 7d. à 9d. la livre, et ce parce que tout le duvet avait été enlevé au cours du voyage. Or le consommateur anglais attache un grand prix à la parfaite fraîcheur des grappes.

La Linnean Society of London, dans son assemblée générale du 5 novembre, a adopté la proposition suivante relative aux naturalistes belges se trouvant en Angleterre:—"Les membres de la Linnean Society connaissant des Botanistes ou Zoologistes belges actuellement en Angleterre, sont invités à se mettre en rapport avec le Secrétaire Général, qui soumettra leurs noms à un Comité spécialement constitué à cet effet. Le Comité est autorisé à inviter les Botanistes et Zoologistes belges (dames ou messieurs) à assister aux réunions de la Société et à faire usage de la bibliothèque, sous certaines conditions pour ce qui concerne l'emprunt de livres. Des comptes-rendus des réunions leur seront adressés pendant leur séjour dans le pays."

MARKETS.

COVENT GARDEN, November 18.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz. ..	3 0- 3 6
Bouvardia, pink, per doz. bun...	4 0- 6 0
— white	4 0- 5 0
Camellias, white, per doz. blooms	1 6- 1 9
Carnations, per dozen blooms, best American varieties ..	1 0- 1 9
— smaller, per doz. bunches..	9 0 10 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz. ..	1 9- 2 0
— yellow per doz.	1 9- 2 0
— pink ,,	1 9- 2 0
— bronze ,,	1 6- 2 0
— white, medium per doz. ..	1 0- 1 6
— coloured, per doz.	0 9- 1 3
— Spray, white, per doz. bun...	4 0- 5 0
— — yellow, per doz. bun. ..	3 0- 4 0
— — pink, per doz. bun. ..	3 0- 4 0
— — bronze, per doz. bun. ..	3 0- 5 0
— singles, disbudded, per doz. blooms ..	0 9- 1 3
— — sprays, per doz. bunches ..	4 0- 8 0
Eucharis, per doz.	1 6- 2 0
Gardenias, per box of 15 and 18 blooms.. ..	2 0- 3 0
Lapageria alba, per doz. blooms ..	— —
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long	2 3- 2 6
— — short ..	2 0- 2 6
— lancifolium album, long ..	1 6- 1 9
— — — short ..	1 3- 2 0
— — rubrum, per doz., long ..	1 3- 1 6
— — — short ..	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	1 6- 2 0
Narcissus, Soliel d'or, per. doz. bun.	5 0- 6 0
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium ..	1 6- 2 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches ..	5 0- 6 0
Roses: per dozen blooms, Bride	1 6- 2 0
— Kaiserin Augusta Victoria	1 0- 1 6
— Lady Hillingdon	1 0 1 3
— Liberty ..	1 6- 2 6
— Madame A. Chatenay ..	1 0- 2 0
— Melody ..	1 3- 1 6
— My Maryland..	1 3- 1 6
— Niphetos ..	1 3- 1 6
— Prince de Bulgarie	1 0- 1 6
— Richmond ..	1 6- 2 6
— Sunburst ..	1 3- 2 0
— Sunrise ..	1 0- 1 6
— White Crawford	1 6- 2 0
Statice, mauve, per doz. bunches ..	3 6- 4 0
Stephanotis, per 72 pips	— —
Tuberoses, on stems, per doz ..	0 5- 0 6
— short, per doz.	0 3- 0 4
Violets, English, per doz. bunches ..	1 0- 1 6
— Princess of Wales, doz. bun.	2 0- 3 6
White Heather, per doz. bunches..	4 0- 6 0

Cut Foliage, &c. Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	4 0- 6 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Autumn foliage, various, per doz. bunches ..	6 0-10 0
Carnation foliage, doz. bunches ..	3 0- 5 0
Croton foliage, doz. bunches ..	12 0-15 0
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Honesty, per doz. bun.	10 0 12 0
Lichen Moss, per doz. boxes ..	10 0-12 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
Pernettia, well berried, per doz. bunches ..	8 0- 9 0

Remarks.—Except in one or two instances, stocks of most subjects are as plentiful as they were last week, but Roses are becoming more valuable, and especially the red varieties, Liberty and Richmond There are some excellent blooms of Madame Abel Chatenay, the colour being much richer than hitherto. Prices show a tendency to become firmer, especially for white flowers. Best quality sprays of white Chrysanthemums are in demand, but coloured Chrysanthemums, including medium and large blooms, can be purchased very cheaply. Orchids are in no great request, and there are large stocks of Cattleyas. Gardenias, like red Roses, are fast becoming scarcer and their prices are advancing daily; Camellias, white Carnations and white Roses are largely used as substitutes for Gardenias. Lily-of-the-Valley is cheap, but Liliums are a trifle firmer in price than last week, the blooms being of good quality.

Plants in Pots, &c.: Average Wholesale Prices

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen ..	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
– variegated ..	30 0-60 0
Begonia Gloire de Lorraine, 48's, per dozen ..	10 0-12 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen ..	10 0-12 0

Remarks.—There is a slightly better demand for Ferns, but flowering plants do not seem to attract buyers except a few plants of Bouvardias and pink and white-flowered Begonias. There are ample stocks of Solanums, and the growers would welcome more buyers. During the past week the first plants of Erica hyemalis have been offered for sale.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples—	
— Californian Newtown Pippins, per box	5 6- 8 6
— English dessert, per ½ bushel ..	2 6- 4 6
— cooking, 1 bush.	2 6- 5 0
— Nova Scotia, per brl. ..	12 0-16 0
Bananas, bunch:	
— Medium ..	5 0 —
— X-medium ..	6 0 —
— Extra	7 0 —
— Double X ..	8 6 —
— Giant	9 0-10 0
— Red, per ton ..	£20 —
— Jamaica, p. ton	£15 —
Cobnuts, per lb. ..	0 4- 0 5
Cranberries, per case	7 6-13 0
Grapes: Alicante, per lb.	0 7- 1 6
— Almeria ..	10 6-15 0
— English, Gros Colmar, per lb.	0 10- 1 9
Grapes (*contd*)—	s d. s.d.
— Muscat of Alexandria ..	1 7- 3 6
— Canon Hall, per lb.	2 0- 5 0
Medlars, per ½ sieve	2 6- 3 0
Melons	0 9- 2 0
Nuts, Brazils, p. cwt.	60 0 —
— Chestnuts, Redon, per bag ..	9 0-16 0
— Walnuts, French, per bag ..	7 6-10 0
Pears, American, per barrel ..	18 0-24 0
— Californian, per case ..	8 0-14 0
— English, ½ sieve	3 0- 4 0
— stewing, per bushel.. ..	7 0- 8 0
Quinces, per ½ sieve	3 0- 3 6
Sloes, per doz. lbs.	2 0 —

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	3 0- 3 6
Beans, French, per lb.	0 6- 0 8
Beetroot, per bushel	3 0- 4 6
Brussels Sprouts, per ½ bus. ..	1 0- 1 6
Cabbages, per tally	5 0- 6 0
Carrots, per cwt. ..	2 6- 3 0
Cauliflowers, per tally	5 0- 7 6
Celery, per doz. bun.	7 0- 9 0
Chicory, per lb. ..	0 6- 0 8
Cucumbers, per flat	7 0- 8 0
Eschallots, per cwt.	7 0 —
Garlic, per lb. ..	0 6- 0 7
Horseradish, English, per bundle	3 0- 4 0
Leeks, per dozen ..	1 6- 2 0
Mushrooms, cultivated, per lb...	1 6 —
— Buttons ..	1 6 —
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per cwt. ..	7 0- 9 0
Parsley, per dozen bunches ..	1 0- 2 0
Parsnips, per cwt.	4 0- 4 6
Sage, per dozen ..	2 0- 4 0
Seakale, per doz. punnets ..	12 0-15 0
Spinach, per bus...	2 0- 2 6
Tomatos, English, per doz. lbs. ..	4 6- 5 0
— seconds ..	2 0- 4 0
Thyme, per dozen bunches ..	2 0- 3 0
Turnip, English, per cwt.	2 6- 3 0

Remarks.—There is a better trade in English Apples, the principal varieties being Bramley's Seedling, Dumelow's Seedling (syn. Wellington), Blenheim Pippin, Lane's Prince Albert and Newton Wonder. The principal dessert variety is Cox's Orange Pippin. Shipments of Apples received from Nova Scotia have been fewer in the past week, but from U.S.A. there have been supplies of King of the Pippins, Baldwin and York Imperial. Apples in barrels are fairly plentiful, and cases of Apples from Oregon and California contain good fruits of Jonathan, Newtown Pippin, Winesap, Spitzenburg and other varieties. Pears are arriving from America in barrels, the principal varieties being Duchess, Easter Beurré and Keiffer, whilst from Oregon we are receiving fruits of Winter Nelis and Doyenné du Comice. There are good supplies of black Grapes, but fewer bunches of Muscat varieties. Chestnuts are reaching the market in increasing quantities from Redon, Naples and Périgord. Home-growers are sending fewer Tomatos and Cucumbers, and there have been less numbers of Tomatos from Teneriffe. Cultivated Mushrooms are scarce. There are plenty of forced Beans from both the Channel Islands and Madeira, but there is a very poor sale for them. There are also a few forced Potatos and Peas. Vegetables, including a few salads, have been received from France during the past week. Tropical fruits on sale include Custard Apples, Mangos, and Avocardo Pears. Onions and Potatos are getting dearer, but other kinds of common vegetables are plentiful and cheap. Trade is only moderate, for buyers purchase only sufficient for their actual needs.—*E. H. R., Covent Garden, November 18, 1914.*

New Potatos.

	s. d. s. d.
Bedford	3 3- 3 9
Blackland	3 0- 3 3
Dunbars — Up-to-date	4 6- 4 9
Dunbar – Langworthy ..	5 6 —
Essex	3 6- 3 9
Kent	3 6- 4 0
Lincoln	3 3- 4 0

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending November 18.

The Greatest Cold as Yet this Autumn.—This proved a week of variable temperature during the daytime, but cold at night. On the four coldest nights the exposed thermometer registered from 9° to 13° of frost. All these night temperatures are lower than any previously recorded here this autumn. The ground is at the present time 1° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Rain fell on five days, to the total depth of ½ inch. On one day a few flakes of snow fell. One and a half gallon of rain-water came through the bare soil gauge during the week, but none at all has as yet come through the percolation gauge on which short grass is growing. The sun shone on an average for 3½ hours a day, or for 1¾ hours a day longer than is usual in the middle of November. Strong westerly winds prevailed on the first three days, but since then there have been only light airs and calms. The mean amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by as much as 15 per cent. My Dahlias were killed on the night of the 14th by 13° of frost. This is nine days later than the average date of their destruction in the previous twenty-nine years, and nine days earlier than last year. *E. M.*

Obituary.

Dr. M. C. Cooke, V.M.H.—No man who takes a pride in the dignity of human life can contemplate unmoved or record without reverence the passing away at Southsea on the 12th inst., in his ninetieth year, of the veteran mycologist, Mordecai Cubitt Cooke. Before the present generation of botanists was born, and before their fathers were born, Cooke was engaged on those studies to which he was faithful up to the time of his death. Though of narrow means, he, like others of an earlier and more courageous generation, made up his mind what he wanted to do and did it. One great asset was his, a good education in childhood. Thanks to an uncle, a Baptist minister, with whom he resided at Ilford, he learned Latin, Greek, algebra and the fundamentally important art and science of observation. This is the kind of education for which the modern child, harassed with a multiplicity of subjects, has no time; yet it is the kind which produced many of the most distinguished naturalists of the early nineteenth century. Led by his habits of observation and by a natural bent of mind which seems to be a general quality of all men who achieve distinction, Cooke became in early youth an ardent and as the event proved a life-long student of the Fungi. This was at a time when the modern science of mycology was in its infancy; when Berkeley and de Bary, the greatest of all mycologists, were laying the foundations of that science.

In a narrative of Dr. Cooke's career, written by himself, we learn that he was first apprenticed to a wholesale draper, after which he was engaged as a copying clerk in a solicitor's office in Tooley Street, London, where he remained for some two years. In 1849-50 "I accepted an invitation to make myself acquainted with the Pestalozzian system of education by a visit to Mr. and Mrs. Treen at the Infant Schools in Regent Street, Stockton-on-Tees, whither I went and remained some three months in intimate contact with the details of the system and its practical application. At the end of that period I was induced to reply to an advertisement seeking a master and mistress to open new National Schools in Lambeth." Cooke was successful in securing the appointment of head master, and having obtained a first-class certificate in botany, he formed "the Society of Amateur Botanists" which met periodically in a small room in Soho, one of its active members being our valued artist, Mr. Worthington G. Smith. "We had excursions on the Saturday afternoons, and it was whilst engaged in these excursions that I first became interested in fungus parasites." Cooke commenced the study of economic products of the vegetable kingdom, visiting brokers in Mark Lane and Mincing Lane for the purpose of obtaining samples of any new or interesting products which came into the market. In 1860 he resigned his appointment as schoolmaster, and we next find him lecturing on botany, in the gardens of Holly Lodge, Highgate, to the gardeners and others in the employ of the late Baroness Burdett-Coutts. In 1861-62 he was appointed, on the recommendation of Mr. Simmons—author of *Economic Products of the Vegetable Kingdom*—by the Commissioners of New Zealand to compile their catalogue of exhibits at the exhibition of 1862. He also completed a similar work for the India Commissioners, and this led to an appointment in the Indian Museum at Fife House, Whitehall. Thus he became a member of the Civil Service under the India Office. It was about this time that his first work on fungi was published, under the title *Plain and Easy Account of the British Fungi.* At about this time he also published *A Manual of Structural Botany* which passed through sixteen editions. He received £10 for the copyright, which also covered the trouble of drawing on the 215 woodcut blocks supplied by the engraver. His great energy and capacity as a writer of scientific works are seen in the rapidity with which such works as *A Manual of Botanic Terms; Our Reptiles, a Plain and Easy Account of the Lizards, Snakes, Newts, Toads, Frogs and Tortoises Indigenous to Great Britain; Papers on Microscopic Fungi*, published in the *Popular Science Review*, afterwards revised and issued as *Rust,* *Smut, Mildew and Mould; An Introduction to the Study of Microscopic Fungi,* were published. *Grevillea* appeared in 1872, and was first issued monthly but afterwards published quarterly. It had a wide publication, and the editor received specimens of fungi from all parts of the globe. It was in consideration of Cooke's work in determining the fungi of the United States of America that the University of St. Lawrence conferred on him the honorary degree of Master of Arts, and he received a similar honour from the Yale University. In 1880 he published, as he describes it, "the most ambitious work of my career," entitled, *Illustrations of British Fungi.* The plates numbered 1,200, and the work ran into eight volumes. The publication was not completed until 1891. In 1880 the Indian Museum was abandoned, and members of the staff pensioned and dismissed. Sir Joseph Hooker made application to have Mr. Cooke's services transferred to the Royal Botanic Gardens, Kew, and he was in consequence appointed cryptogamic assistant in the Herbarium. His work at the Indian Museum was almost entirely devoted to economic botany, and numerous printed reports were published on such subjects as *The Gums and Resins of the Indian Museum* and *The Oils and Oil Seeds of the Indian Museum.* Whilst at Kew he continued to issue works, several of which were published by the Society for the Promotion of Christian Knowledge. In 1902 the Royal Horticultural Society bestowed on him the Victorian Medal of Honour, and in 1903 he was awarded the Linnean Society's Gold Medal.

During his long career he collected and preserved specimens of fungi and other plants, and in 1898 his herbarium of 46,000 specimens was acquired to augment the National Collection at Kew. During later years his eyesight failed him, and he was unable to do much work with the microscope, but in 1900 he prepared the valuable work on *Fungoid Diseases of Cultivated Plants,* published by the Royal Horticultural Society. This was his last work, for he wrote, "within twelve months after its publication my eyesight had failed to the extent that my microscope was locked away and I could not read a line of ordinary printed matter, and had to relinquish all my botanical pursuits, and now I can neither read nor write, except very occasionally, in the bright light of day, and I suppose I must accept the dictum of the experts that my eyes are left behind in my microscope." This was written in 1912, and since that time Dr. Cooke has lived peacefully at his home at Kentish Town, where we visited him two years ago after his obituary notice had appeared in the *Kew Bulletin* and the daily Press. He passed away at East Southsea on the 12th inst., as stated, and his daughter, Miss Lena Cooke, informs us that the end was peaceful and painless. Dr. Cooke was for half a century a valued contributor to these pages; he has assisted our readers in determining the diseases of their plants and crops, and the best means of combating them, and gardeners everywhere owe a great debt to his labours.

Alexander Donaldson.—We regret to record the death, on the 6th inst., of Mr. Alexander Donaldson, at Lindhurst, Hindhead, aged 88 years. Mr. Donaldson was for many years gardener to the late Mr. J. Grover, Heatherbank, Hindhead, and he held the appointment until about six years ago, when he retired on a pension granted by his employer. He was apprenticed in the gardens of Stone Palace, Perth, and his first headship was in the gardens at Latimer, Buckinghamshire, where he remained for about twenty-three years. Whilst at Latimer many young gardeners were trained under him who now hold responsible positions. He was a man of kindly and genial temperament, and had a wide circle of friends. He leaves one son and four daughters.

W. Bound.—We regret to record the death of Mr. W. Bound, on the 14th instant, aged 77 years, for nearly forty years gardener at the Chantry, Berkeley, Gloucestershire. Many years ago he was in the service of the late Canon Stackhouse, in Cornwall, and removed with that gentleman to Berkeley in 1871, remained with him until his death in 1907, and continued to hold the appointment of head gardener at the Chantry until about four years ago, when he retired. Mr. Bound was a life member of the Gardeners' Royal Benevolent Institution. His two sons, Mr. George P. Bound, and Mr. W. P. Bound, are well known in the horticultural world; the former is gardener at Grimston Park Tadcaster, where he succeeded the late Mr. Henry Clayton, and the latter, for many years gardener to Sir Jeremiah Colman, Bart., is now in business as a nurseryman at Redhill.

G. Maycock.—The death occurred, on the 11th instant, of Mr. G. Maycock, Leftwich Grange Farm, Northwich. Mr. Laycock was formerly gardener at Luton Loo, and subsequently became gardener at Vale Royal Gardens, where he remained until about two years ago, when he engaged in farming on his own account. The funeral service was held at Whitegate Church on the 14th instant, his remains being carried to the grave by employees of Vale Royal Gardens. He leaves a widow and two sons.

THE LATE MORDECAI CUBITT COOKE, V.M.H.

ENQUIRY.

Potato Great Scot.—I should be obliged if any reader who has come across a case this season of the Great Scot Potato being affected with the black scab or Potato wart would give details in the columns of this paper. *Midland.*

Answers to Correspondents

Carnation Diseased: *A. W. W.* Your Carnation plant is injured by the fungus Septoria dianthi, and was probably diseased before it was layered. Remove the diseased leaves and spray the plant at intervals with liver of sulphur, $\frac{1}{2}$oz. in 2 gallons of water.

Chrysanthemum Unhealthy: *J. S.* There is no organic disease due to a fungus. The trouble is the result of some error in cultivation, and could only be determined by an inspection of the plants and a knowledge of the mode of cultivation.

Cyclamens Diseased: *A. H.* The injury to your Cyclamens is caused by mites. Plunge the entire foliage into a solution of quassia, and sponge thoroughly the under-surface of the leaves with this insecticide.

Cypripedium with Twin Flowers: *Interested.* Twin flowers on Cypripedium insigne and other Cypripediums are not uncommon. We have seen plants in which all the stems were furnished with two flowers. The abnormality is evidence of good cultivation.

Names of Fruits: *E. F.* Gooseberry Pippin.—*W. D. S.* Peasgood's Nonesuch.—*G. H. H. W.* 1, Bedfordshire Foundling; 2, a fine fruit of Blenheim Pippin; 3, Gilliflower (not Cornish); 4, Roundway Magnum Bonum; (5) Sturmer Pippin; 6, Fearn's Pippin.—*W. E. P.* 13, Wormsley Pippin; 14 and 15, Dumelow's Seedling (syn. Wellington); 16, Holland Pippin; 17, Minchull Crab.

Names of Plants: *W. F. Godwin.* Diospyros Lotus.—*B. C.* 1, Cupressus Lawsoniana var. lutea; 2, Veronica salicifolia var.; 3, Pittosporum undulatum; 4, Clematis Flammula; 5, Desfontainia spinosa; 6, Cistus villosus var.—*D. B. A.* 1, Sequoia sempervirens; 2, Cedrus Deodara; 3, C. atlantica; 4, Pinus austriaca; 5, Quercus Ilex; 6, Laurus nobilis; 7, Tsuga canadensis; 8, Crataegus Crus-galli var.—*Philpott.* Eriobotrya japonica. The fruit is edible and used in Southern France as a dessert fruit under the name of Loquat. The tree is a native of Japan, and the Japanese grow several varieties. In the southern parts of this country the Loquat may be grown against a south or west wall, but the fruit does not usually mature.—*Irishman.* Maxillaria picta is a very interesting species; the showy colouring of the flower is found on the reverse of the floral segments.

Plums for a North Wall: *Cardiff.* The varieties you name are amongst the best and most suitable for a north wall. Other varieties that have fruited well this season are Washington, Jefferson and also Greengage (old). Coe's Golden Drop does not crop well every year.

Poinsettias Failing: *Lodge, Halifax.* The treatment you describe is correct, and therefore the failure of the plants must be due to some circumstance which only those on the spot could determine. Poinsettias when maturing their bracts and flowers require plenty of light, but not an excessively moist atmosphere. The liquid manure may have been used at too great a strength, or a sudden fall in the temperature of the house, even on one occasion only, might have caused the mischief. Protracted dull weather with fogs very frequently cause the trouble you describe. Syringing the plants when in flower is not advisable, and it might have contributed to the bad results.

Rust Disease of Carnations and Chrysanthemums: *P. J. P.* The best way of preventing these diseases another season is to start with healthy stock; if your plants are very badly affected we advise you to burn them and secure either cuttings or plants from a source free from disease. In the meantime, remove the worst of the affected foliage in both cases, and spray the plants with a fungicide. Either diluted Bordeaux mixture or liver of sulphur may be used, the latter at the rate of half an ounce to two gallons of water. In the case of the Carnations, a rose-red solution of permanganate of potash would be effectual in preventing the disease from spreading. You cannot hope to grow healthy plants in houses in which the plants were diseased the previous season unless you take the precaution to cleanse the structures thoroughly, as the spores of the diseases lurk in the soil, on the woodwork, etc. It is best to change the houses sometimes for the various plants if this can be done.

Communications Received.—A. D. W.—M. G. A. —W. J. W.—H. E. K.—Interested—E. M. H.—D. S.—A. W.—W. D. & S.—C. P.—H. P.—L.—A. T. H.—J. M.—W. D. W.—C. B.—E. H.—J. D.—G. B.—R. C. N.—B. P.—W. J. B.—E. M.—W. E.—H. E. D.—D. M. L.—A. Mennie, Capetown—R. P. B.—D. W. T.

THE
Gardeners' Chronicle
No. 1,457.—SATURDAY, NOVEMBER 28, 1914.

CONTENTS.

Alonsoa, a frost-cut .. 356
Apples, a disease of .. 357
Baeria coronaria .. 356
Books, notices of—
  Flowering Plants of the Riviera.. .. 351
  Productive Orcharding 354
  Sweet Peas for Profit 350
Cooke, the late Dr. M. C. 356
Farrer's, Mr. Reginald, explorations in China 347
Gas tar as a remedy for mealy bug 357
German camp at Longmoor 355
Hyacinth flowers from Holland 355
Medicinal plants, the cultivation of . .. 348
Obituary—
  Weismann, August .. 361
Potato Arran Chief .. 357
"Pour nos Amis français et belges" 360
Rome convention, commentary on the .. 350
Societies—
  Bournemouth Hort... 357
  Debating 361
  Horticultural Club .. 358
  Manchester & North of England Orchid 359
  Perpetual-flowering Carnation 355
  Royal Horticultural 355
  (Scientific Committee) 357
  Scottish Hort. .. 359
Trees and shrubs—
  Hardy Bamboos during the past season 351
  Pyracantha angustifolia 352
War items 355
Week's work, the—
  Flower garden, the .. 353
  Fruits under glass .. 352
  Hardy fruit garden, the 353
  Kitchen garden, the.. 353
  Orchid houses, the .. 352
  Plants under glass .. 352

ILLUSTRATIONS.

Baeria coronaria 356
Primula flava 348
Primula viola-grandis, hort. 347
Sophro-Cattleya November 351
Stellera sp., a new 349
Yates, Corporal Wilmot, portrait of 355

MR. REGINALD FARRER'S EXPLORATIONS IN CHINA.*

VI.—TROUBLED TIMES.

OUR adventures for the last two months belong more to history than to horticulture. Suffice it, then, here to say that, having been hounded off the border by an army of monks with their parishioners (who accused us of bringing hail upon their crops), we found ourselves swept away in the whirlwind of red revolution which has lately been devastating Kansu; and, landing up at last in a remote harbour of comparative safety, have ever since been in a state of perfect isolation and blockade, no postman ever daring to affront the terrors of the road, while the little town itself alternately shivered with fear of the rebels, or of raiding Thibetans, or of the Szechuanese troops that at last came up to defend it. None the less, horticultural interests have not halted: we found much interesting and valuable work to do on the border, and foresee more yet, if we can so far get the monks reduced to sense and order as to be able to return to that district with reasonable prospects of safety another season. It offers a most glorious range of 18,000-ft. snow mountains, upheld by huge stretches of alpine lawn and fell: below fall vast primeval forests towards the brawling bed of the river far beneath, on the other side of which rises a long grassy ridge of moorland and scrub. Here we found a very interesting plant in abundance, quite wringing one's heart with thoughts of Primula farinosa at home, so precisely does it repeat the beauty of Pretty Birde'en, and seek the same dwelling-places. This is none other, undoubtedly, than that Primula which has passed, rightly or wrongly, for P. Loczii, otherwise only reported from Alaska. It is a dainty little plant, bright green and powderless in the leaf (except in very shady situations), with heads of brilliant large farinosa flowers on fine scapes of three or four inches: it has a curious habit of throwing stolons from the centre of the rosette, and its home is on cool high banks of cool aspect, and all over the moorland ridge, which is pimpled with countless hummocks, each supporting a scrubby bush Willow or two; and on their flanks abundantly shine the bright pink faces of the Primula. But much more striking is a new form or species of the Omphalagramma group, standing nearest to P. Delavayi. I send two photographs of this (fig. 133), showing first its great wide full face, of clear and refulgent violet-blue, and then its astonishing profile and grotesque tube, with the reflexing upper lobes and the projecting lower ones (as in P. vincaeflora, and, probably, in others of this strange

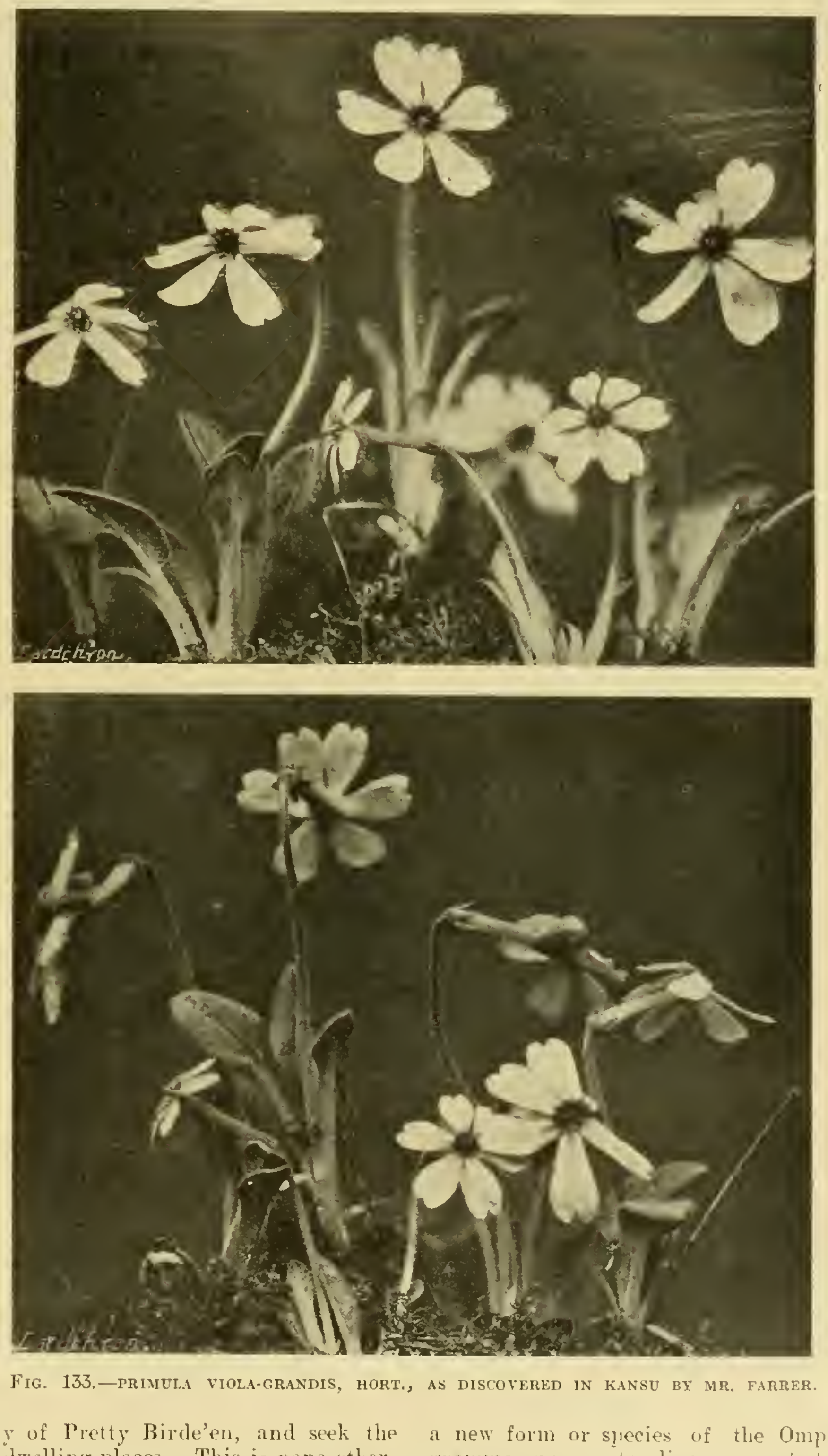


FIG. 133.—PRIMULA VIOLA-GRANDIS, HORT., AS DISCOVERED IN KANSU BY MR. FARRER.

---

* The previous articles by Mr. Farrer were published in our issues for September 12 and 26, October 17 and 31 and November 14.

section), which give it the look of some monstrous Violet or Pinguicula. P. "viola-grandis" occurs but very locally, yet freely where it is found, which is always on steplike slopes of alpine turf between 9-11,000 feet, never in any exposure, but facing west and north-west, growing handsomely from the under edge of the tussocks, but sometimes even on the opener surface, amid the moss that gathers about the stems of the tiny Rhododendrons. It has no desire for moisture, except as yielded by the cool air and frequent rains of its elevated place, and, in its lack of rigid requirements as to soil, gives hope of a fair constitution, for it grows with equal heartiness in vegetable humus, rich and black, in soft limy loam, and in loose red earth of the steep slopes, the drainage being always abrupt, and the soil spongy with admixture of limestone chips. Occasionally, too, it may be seen on the dank, mossy ledges of deep cañons, but never in open places, nor, on the Alps, in any exposures other than I have quoted. And it is a marvellous thing indeed to come suddenly upon its blue flares of flame illuminating some high cool slope of the alpine moorland. The buds open as perfectly regular six-rayed (as a rule) stars of deep violet-purple velvet, but as they rapidly enlarge, their colour lightens, and back go the three upper lobes, and forward the three lower, stiff and bold; and there is the great violet flower complete.

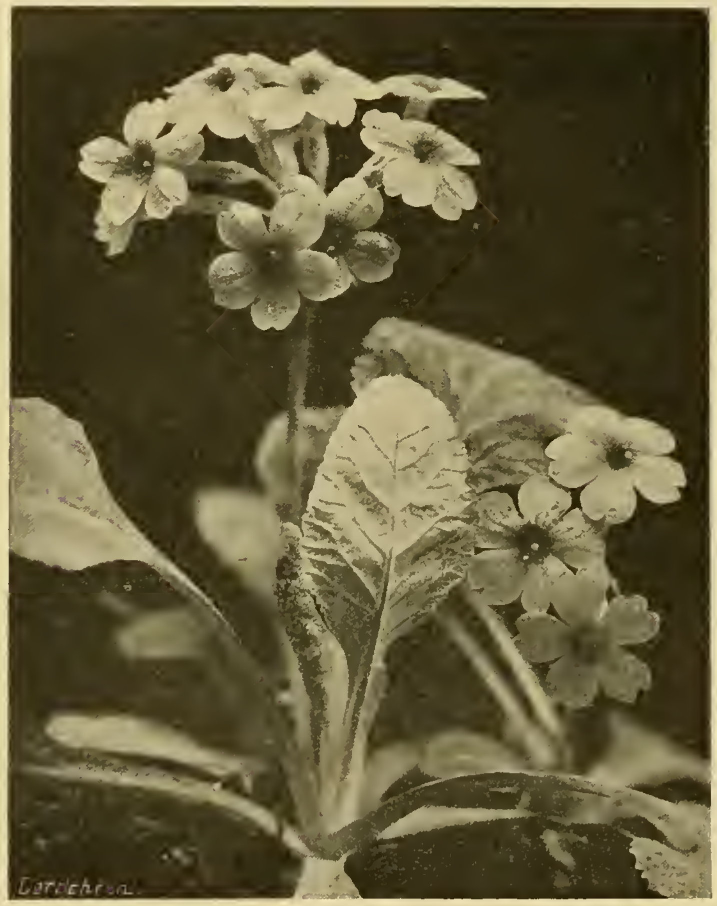


Fig. 134.—Primula flava as discovered by Mr. Farrer.

Primula No. 2 has reminiscences of European Alps and gardens, for it may be well pictured as a pale truss of P. hirsuta, applied close upon a single and small rosette of P. frondosa. It haunts cool situations and cool mossy cracks on shady limestone cliffs at 7,000 feet or so, but ascends undaunted to the highest ridges and arêtes of all, where at 14,000 feet it finds the coolness and moisture it likes in every aspect and cranny of the rocks. Lower down on these ranges, in bosky places and on the underlip of cliff-ledges, P. lichangensis is common and pretty; further south its place is taken by a more beautiful plant, which, instead of the stiff umbel and flat-faced star, has saucer-shaped blooms reminiscent of a fine P. viscosa, borne, too, but with more grace, in something of P. viscosa's one-sided, half-nodding head. And another delicate charmer is P. No. 9. But this must be sought higher up, at about 9,000 feet, where coppice gives way to scrub and coarse lawn. And it has the most curious taste, for never yet have I seen it, except actually *in* the mountain-track, where it luxuriates here and there in the heavy limy loam, and germinates in blocks like Groundsel, of which, indeed, the crowded little seedlings have much the look, till up come shooting the delicate fine scapes of about five inches, each carrying, as a rule, a pair of horizontal flowers like much-enlarged versions of P. farinosa's, flat-faced and round, with so long a glowing tube of crimson that the plant, to the first glance, takes a median station between P. longiflora and P. sibirica.

Beautiful and charming, however, as are all these children of the last paragraph, they yield to anguster glories from higher stations still. First comes P. flava (fig. 134). This may rarely be seen, in sheer and overhanging cliffs of rosy limestone, hanging in masses from the ledges and grottoes of the precipice, and shaking out its great heads of pure soft citron-yellow in cruel derision at its worshippers as they gaze up at it helplessly from the beck bed far beneath. Fortunately, however, seed falls and germinates in the cooler banks of the cañon, and there acquaintance may be made with the full beauty of P. flava. Of this the photograph gives due expression: the whole plant has a soft, lax, and half-hardy look, which gives it a curious suggestion of belonging to the remote Verticillata group. Most exquisite is the bland and glowing pallor of the flowers, clean, melting, and tender in tone as those of P. sikkimensis; and their charm is enhanced by the flaccid loose-textured leaves, which are light dull green on the upper surface, and beneath (like stems and pedicels), all ghostly in a vesture of snow-white powder. The whole plant has a serene beauty, which I hope may soon, and permanently, be better realised in England than by means of cold photographs or word-pictures. As for smaller fry (before we ascend to higher alpine elevations) space would lack in a year's bound volume to tell fairly of the Paeonies, sweet as roses, that fill the stony, grassy places: of dainty-fine Lloydia tibetica, swinging fairy-bells of white blown-glass from the precipices; of four Cypripediums — huge C. macranthum, crimsoned and veinous, a tall sulphur-creamy companion to C. hirsutum (C. spectabile of gardens), a wee miniature of greenish-yellow, with a warted golden pouch of wax, and a striped elegant species with vandyked mouth to the bottle-necked lip, and a strong, delicious scent of Lily-of-the-Valley, and of many another scattered delight, sinking only into insignificance beside the Primulas. I will but here tell of Stellera, with a photograph that shows something of its habit (fig. 135), but not quite its normal domed shape, and nothing of its fiery ruby buds and exquisite fragrance; it is a plant of lower elevations, between 6-7,000 feet, in ordinary limy loam, hot and stony and dry, amid coarse grasses and herbage on the open sunny slopes, where, even in the track-sides, it forms a deep woody perennial root, from which, each season, spring the unbranching stems, ending in a crown of sweet and pearl-pale Daphnes. From all this, it should be a plant of delight in our gardens. *Reginald Farrer.*

THE CULTIVATION OF MEDICINAL PLANTS.

The Board of Agriculture has recently issued a leaflet (No. 288) of considerable interest, on "The Cultivation and Collection of Medicinal Plants in England." It points out that such plants have been grown in this country for centuries. In the Middle Ages they were cultivated in the gardens attached to monastic establishments and to the mansions of noblemen, and

Deadly Nightshade (Atropa Belladonna) and Henbane (Hyoscyamus niger) are still found growing wild in the neighbourhood of ruins, though whether this is really due to ancient cultivation is an open question.

To-day there are drug farms at Mitcham, Carshalton, Hitchin, Ampthill, Long Melford, Steppingley, Market Deeping and Wisbech; but the trade has of recent years suffered from the competition of foreign products, chiefly plants growing wild in Austria-Hungary and Germany. The war has stopped the importation of these products, with the result that prices have risen rapidly, especially in the case of belladonna. The leaflet points out that growers who can raise good crops should make an ample profit in the near future. On the other hand, there is a danger of overloading the market, and the necessity for co-operation between producer and manufacturer is evident. Similar co-operation in the Cinchona bark industry has recently been found useful in restricting the output to what is really required without raising the price to the consumer. Doubtless the fear of a rapid fall in prices at the end of the war will also act as a deterrent to growers who might otherwise extend the acreage devoted to the growing of drugs.

Lovers of herbaceous flowers will read with interest that Aconitum Fischeri, whose spikes of large rather pale purple-blue hoods have been so fine this autumn, is grown in Japan as a medicinal plant, the root selling at 35s. per cwt. Many will have noticed on the drawers of a chemist's shop the inscription "Acon. Nap." It seems that our wild British variety is superior to the Japanese kind as a drug, and finds a market at as much as 2s. a lb. In view of this fact it is surprising that the cultivation of Aconite has not been found profitable in England of recent years. Perhaps it would pay better in Wales, for the plant is abundant on the banks of streams, and in wet Alder copses in Glamorganshire.

Atropa Belladonna is quite an important drug plant. One exporter alone sent nearly 30,000 lbs. of dry root from Hungary in 1908. The plant is plentifully found in the stony soil at the top of the steep escarpments of the Wye Valley in semi-woodland. The berries are black and very poisonous; there are numerous tales of poisoning by this plant.

An old writer says that the leaves of Bella Donna taken internally act as a "narcotic, diaphoretic, diuretic and sialogogue." His meaning must be left to the reader to determine, but it sounds rather painful.

Henbane (Hyoscyamus niger) is a biennial, though there is also a smaller, less-branched annual variety. It is a valuable narcotic, producing much the same effect as opium, without the unpleasant consequences. Smoking the capsules and seeds is a country cure for toothache; the experiment, however, must be rather exciting, as convulsions and temporary insanity are said sometimes to follow its use. A friend of mine was with a picnic party in the Midlands, one of the members of which was a chemist. Henbane was so plentiful where they camped for their meal that the chemist resolved to return armed with sacks next day and gather the crop. This he did, ultimately converting the products of the harvest into £5.

Another trade the effects of the war may revive is the distillation of "wood-naphtha." This may be described as modern charcoal burning, the volatile products of the combustion being collected and condensed in water-cooled pipes as "pyro-lignous acid." Wood-naphtha is refined from this by processes of distillation, grey and brown acetate of lime, acetic acid, and acetone being among the by-products. Charcoal is used in the making of explosives, and extreme care has to be taken in packing to prevent the inclusion of foreign matter; a lost knife, for instance, may necessitate the careful search of tons of charcoal, as it might be sufficient to cause an explosion in the rolling machines of the powder factories.

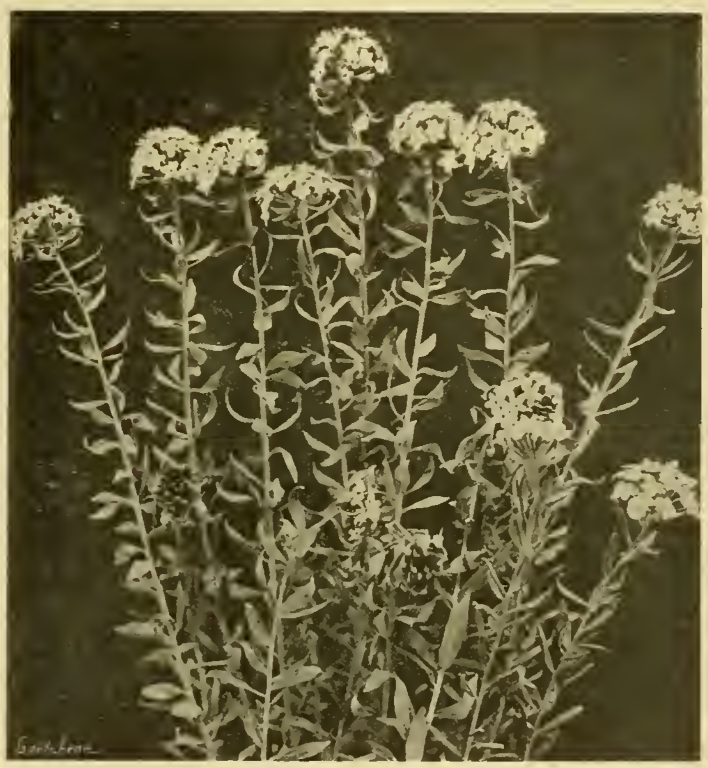


FIG. 135.—MR. FARRER'S STELLERA, WITH "FIERY RUBY BUDS."
(See p. 348.)

Perhaps the trade which holds out the most alluring prospects in this connection is that of the making of sugar from the Sugar Beet. After meat and grain, sugar is our most important food import, and it is likely to increase indefinitely in demand with the spread of civilisation, increased population, and the rise in the standard of living. In the time of Napoleon the world was dependent on canes for its supply of sugar, but the English navy having cut off the supply of cane sugar to the Continent, Napoleon promptly started to make sugar from the Beet. He planted thousands of acres with this vegetable, and established many factories in France, with the result that Beet sugar was gradually substituted for Cane sugar. Last year of the 2,000,000 tons of sugar we imported, only 20 per cent. was Cane. The great bulk of the remainder was imported from Germany and Austria. The Royal Commission on Sugar Supply has adroitly purchased about a million tons of Cane sugar (present and future crop), thus ensuring a plentiful supply for the time being. The importation by traders of sugar into this country has now been stopped, in order to prevent German and Austrian sugar from entering through neutral countries. When European conditions again become settled Beet growing on the Continent, sugar refining, and exportation to England will doubtless be resumed; but the devastation of the Belgian, French, German and Austrian Beet fields, together with the general interruption of industry, will tend to a shortage in the output for some time to come. As an increase rather than a decrease in the demand may reasonably be expected in the future, it will be necessary to look to other sources to supply the deficiency. Many of those who have witnessed the various attempts at Sugar Beet growing in England, in spite of the disappointments and failures inevitable in the case of small undertakings, started in the face of a gigantic and well-established Continental industry, still confidently believe in its success. Many readers will have seen the leader which appeared recently in the *Daily Chronicle* urging the Government to take action in the matter. As the writer pointed out, it might well be to our mutual advantage if the many Belgian refugees at present in our country helped us to establish the industry. Many must have been accustomed to Beet growing, and incidentally much work of all descriptions would be provided. Moreover, this plan meets to a certain extent the objection made in some quarters that work given to the Belgian refugees means less work for our own needy countrymen.

Sir H. Rider Haggard, in his book entitled *Rural Denmark and Its Lessons,* mentions that the sugar factories in that country are paying a dividend of 17 to 20 per cent. As to the objection that was suggested to him by Danish farmers that England was unsuitable for the growing of Beet on account of insufficient sunshine, he points out that this does not tally with the facts recorded by the Meteorological Office concerning the south-eastern English counties. It must be admitted that his own experiments and those of others in the growing of Beet have been far from encouraging, but in these cases the Beets were shipped to Holland for treatment. It is, in fact, essential to have factories on the spot. The "schnetzel" or shredded flesh of the Beet can be used as a serviceable food for stock; treacle is also separated in the processes of refining, which is used for making cattle food. In the Danish factory described by Sir H. Rider Haggard the mud which is washed from the Beet is pumped up and allowed to run a distance of two miles from the factory, where by this means twenty acres of excellent land are formed every year from a useless swamp. All these economies must be effected by the grower himself, and should have a definite effect on the profits. Furthermore, co-operation among the growers, or at the least close relations between themselves and with the factories, will be essential. The factory must not only be able to rely on a certain minimum crop, but must know the approximate amount of that crop before starting the season's work. In previous agitations for a real attempt to start the industry, it is probable that enthusiastic advocates painted the possibilities in too glowing colours and ignored some of the facts brought to light by experience on the Continent. On the other hand, science and practice have greatly increased the percentage of sugar yield in the Beet, and will doubtless make still further progress. There are also further possibilities in the utilisation of by-products. The Canadian Trade Commissioner at Leeds, in a report to the Dominion Government, draws attention to an investigation into the use of by-products in the Sugar Beet industry, and to a method perfected by a French firm. Out of 70,000 tons of Beet treated for the production of sugar, 9,000 tons of scum are produced; 5,000 tons of this scum consist of moisture and saccharine matter, the remaining 4,000 is carbonate of lime. To this lime 1,100 tons of clay are added, and after being submitted to certain processes of burning and crushing the mixture becomes at last 3,162 tons of cement, which is found to fetch a fair price on the market. As, however, the lime has previously been used in the Beet troughs for the purpose of refining and clarifying, this is really a recovered rather than a direct by-product.

Articles dealing with the Sugar Beet industry and inviting the Government to lay out £1,000,000 at once in preliminary expenses, from the pen of Mr. J. W. Robertson-Scott ("Home Counties") have appeared in the October and November numbers of the *Nineteenth Century*.[*] Since a single factory costs about £200,000, and immediate action is necessary if the advantages of the present conditions are going to be made use of, it certainly seems as if nothing but State action is likely to meet the case. In Mr. Robertson-Scott's own words, however, "a culture that teaches good farming, a crop that, unlike Mangolds, is saleable for cash; that gives the agriculturist a storable winter food supply for his stock, supplementary to Mangolds, Turnips and Hay; and that, in effect, returns to the soil all the crop but the sugar it contains"—this surely is worth an organised national effort to secure. *Wilfrid Evans.*

THE ROME CONVENTION: A DIGEST AND COMMENTARY.

The proposal to commit this country to active participation in the Rome Convention is fraught with such serious consequences to the horticultural trade that we consider it our duty to set forth in plain language the essential provisions of the Convention, and to make such comments as are necessary to elucidate the meaning and bearing of certain of its clauses.

The prime objects of the Convention are (1) to prevent the spread of plant pests from one country to another; and (2) to provide for international co-operation in fighting them where they occur. The Convention is limited in scope to plants cultivated by nurserymen and florists, and excludes agricultural plants.

Horticulture, in other words, is to provide the material for, and bear the consequences of, this experiment in international legislation.

The Convention was signed by the three delegates sent as representatives of this country, and was reported to the Foreign Office for final approval and acceptance. As the outcome of a meeting called to consider the bearing of the Convention on horticultural trade, a committee was appointed, and has found itself unable to recommend adhesion to the Convention in its present form. Nevertheless, in the most recent publication of the Board of Agriculture (Report, Horticultural Branch), language is held which suggests that the Board is satisfied with the terms of the Convention, and is looking forward to its ratification. The situation is, therefore, serious, and it is of importance that all who are interested in the industry of horticulture shall understand the significance of the Convention, its probable effects on trade, and the legislation which the Government must pledge itself to introduce in order to give effect to the instrument.

1. There is a general opinion that the Convention is concerned only with regulating the import and export of plants, and that it is not concerned with the movement of plants within a country. This opinion is erroneous. Section I., 1 of the Convention makes it clear that there will be far-reaching interference with the movement of plants within a country directly those plants are found to be infected with a pest scheduled by another adhering country.

2. In order to provide means for determining the appearance of a scheduled pest a system of inspection of all nurseries and similar establishments must be instituted. This means the registration of all establishments which produce plants for sale, and their inspection by officials of the Board. On the discovery by an inspector of a scheduled pest the nursery will be declared to be infested, and the fact will be published in this and in all other adhering countries. (Cf. I., 2.)

3. The Convention contemplates common legislative and administrative action for protecting plants and checking disease. Inasmuch as there exists already in certain countries legislation which prescribes remedies for the prevention or eradication of sundry scheduled pests, power will be provided by clause 1, section 3 (I., 3), to impose on nurserymen the application of such remedies as the experts or officials of the adhering states may prescribe. Adequate or not, growers will be compelled to adopt them, and from commands of this kind there will be no appeal. It should be noted, moreover, that a country which is unable to satisfy other countries that the prescribed remedies are being applied, may be penalised by hindrance of its exports, as, for example, by inspection at the port of entry.

4. The Convention provides for the official regulation of packing and transport of plants. The purport of I., 4 is to require that nurseries must pack and send out their stock by certain fixed methods. It is likely that one condition imposed will be that plants must be washed clean of earth; another that only clean, new cases may be used. It may be necessary to give several days' notice of despatch and to keep parcels open until they have been inspected. Such regulations already exist elsewhere, and since the purpose of the Convention is to ensure common action in all adhering countries, it is to be expected that similar regulations will be imposed here. Once the Convention is ratified, any conditions imposed by the Board may be defended on the ground that they are required by the terms of the Convention and by the decrees of the Institute at Rome.

5. Section 2 of the Convention requires that a Government service of phytopathology shall be created, and the minimal conditions for such a service are:—

(1) One or more research institutes.
(2) Efficient inspection of nurseries, etc.
(3) Inspection of all consignments.
(4) Issue of phytopathological certificates.

Of these conditions all but the first are to be in operation on ratification, and the first is to be established within two years after ratification.

6. Section 4 defines the scope of the Convention, which is to include all nursery stock, fruit trees, flowering bulbs, and cut flowers. Since they are not in the list of things explicitly excluded it must be held to include all wild plants.

7. Section 5 provides that adhering States will not admit living plants, buds, scions, grafts, etc., flowering bulbs, cut flowers, except when accompanied by a phytopathological certificate given by a competent officer of the exporting country. Thus the import of all plants from countries not issuing certificates is barred, and trade is limited to the import of wild and cultivated plants existing in adhering countries.

8. It has been urged by its official exponents that the Convention will facilitate trade; nevertheless, the Convention expressly provides in Section 7 that each adhering country reserves the right to inspect imports, and consignments which are found to be infected with scheduled pests will be refused or burnt—the refusal of a consignment being communicated to the exporting country. There is therefore no guarantee that adhesion to the Convention will bring any relief to the trader.

9. Section 9 provides that States with contiguous frontiers can arrange for the exchange of plants in the frontier zones. France, Italy, and other similarly related countries have a ready means of contracting out of the Convention. England lacking the convenience of a contiguous frontier has no such means of evasion.

A nurseryman of one country need only open a branch on the frontier to have freedom to import and export what he pleases.

10. Adhering States provide (Section 10) schedules of the pests, which are to appear on the certificates. No indication of the contents of the schedule has yet been given by the representatives of this country, and it may be suggested confidently that had they endeavoured to draw up the schedule before their visit to Rome they would never have signed the Convention.

In order to judge of the menace to which cultivators in this country are exposed by the importation of pests, let us consider the eleven insect pests at present scheduled. Of the eleven, six already occur in this country; one is imported frequently in spite of its prohibition, and another has certainly often come into this country.

In the opinion of those best able to judge only one of the eleven scheduled pests is worth a place on a prohibiting schedule, and it is to be observed that this suspicious pest is the one which according to the statement of the Board of Agriculture (1914) cannot become a pest in this country.

11. Adhering States may not extend to non-adhering States more favourable treatment than that which they offer to other adhering States (Section 11). The practical effect of this section is obscure. It may be meaningless. If it means what it says, and if enforced, it would result in restriction of trade between a country and non-adhering States, and would prohibit trade between a country and non-adhering States not possessing phytopathological service.

NOTICES OF BOOKS.

SWEET PEAS FOR PROFIT.[*]

It has been no secret that Sweet Peas—seeds—have been a paying crop to a few specialists for some years past, or since the boom in Spencers, or, as they are frequently termed in this, the newest volume on Sweet Peas, Orchid-flowered Peas. And Henry Eckford did very well in the later years of his connection. He once told me that he could have sold bushels of novelties when there was perhaps no more than a pound of each in existence, American orders coming in in that form. Mr. Harrison Dick's book, while giving due notice to seedling raising, demonstrates the value of the flowers commercially, particularly when cultivated under glass, and produced from October till outdoor flowers come in. In England there are a few establishments in which glass culture is proceeding on a large scale, the flowers being grown to exhibition standard, but it is clear from the statements that Mr. Dick provides that the American florist is far in advance of us. For one thing, he grows a different strain of Pea, one that flowers with more or less freedom during the winter months, and quite distinct from the English strain. These are derived from the old early flowering Blanche Ferry, Spencerised, and provided with long stems, and of a variety of colours. One of the best is of Australian lineage, by name Yarrawa, and, indeed, all the names are new to us, while the estimates of their qualities make us wish to get hold of such excellent forcing varieties. Growers are found all over the United States and in Canada, the structures in which they are grown being large, tall, and roomy, and the general treatment similar to that which Carnations like, though, of course, the cultural details are different. The book is written in terse and practical language, and no part of the subject seems to have been missed, though ever so slightly noticed. It appears to be a volume that ought to have a definite value to most gardeners. *R. P. Brotherston*

---

[*] *Sugar Beet: Some Facts and Some Illusions* (*Field* Office), by the same author, may interest readers.

[*] *Sweet Peas for Profit: Cultivation—under Glass and Outdoors.* By J. Harrison Dick, New York, 1914. With illustrations.

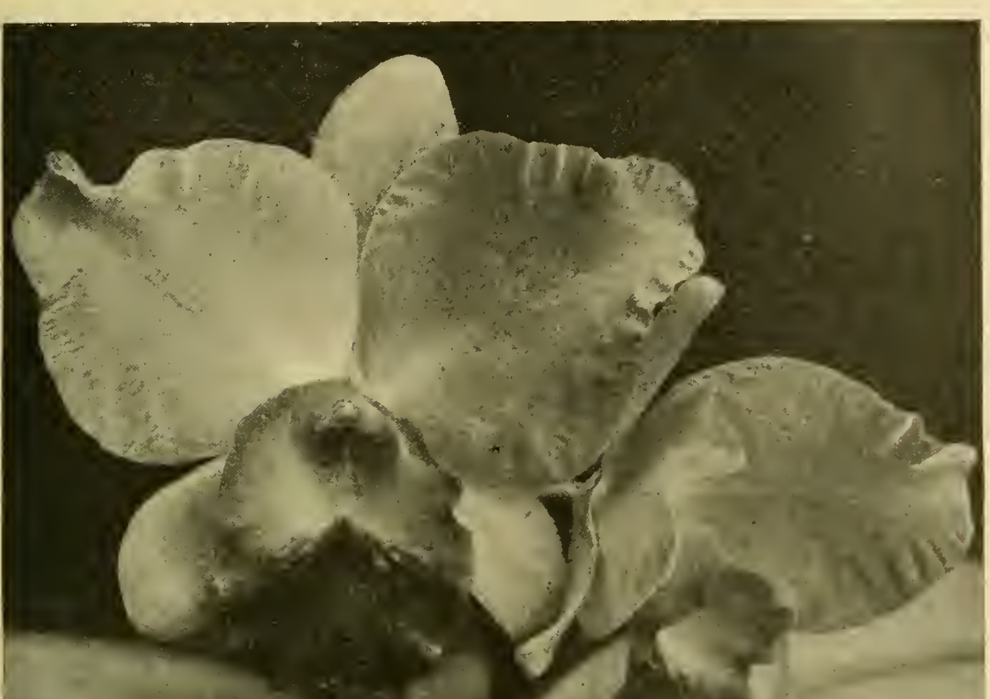


Fig. 136.—Sophro-Cattleya November (Cattleya Portia × Sophronitis grandiflora).
R.H.S. Award of Merit, November 17 (see p. 342).

Flowering Plants of the Riviera.*

Those holiday-makers whose travels take them beyond our own shores, and who like to carry with them one handy book that will help them to distinguish and name the wild plants of the region they are visiting, owe a fresh debt of gratitude to Mr. H. S. Thompson. To his former useful books on Alpine and sub-Alpine plants, he has added the one before us dealing solely with the rich and peculiar flora of the Côte d'Azur, as a Frenchman calls it, the Riviera of others. It is a worthy companion to his older books, for, despite the fact that 1,800 species of plants are described sufficiently fully for easy determination, that keys are provided to the genera, and that in the case of most of the local species, localities are given, yet it is such a slender and portable volume that no one should grudge it space and weight in his luggage.

It also contains a useful chapter on collecting and drying plants, a short glossary, and a very interesting introduction by Mr. A. G. Tansley, in which are described the main features, and the associations of plants, in the vegetation of this shore of the Mediterranean.

It is therefore a fuller and more ambitious work than the delightful little volume on the same flora that Professor Penzig contributed to the useful pocket floras in the Bibliothèque de Poche du Naturaliste series. Mr. Thompson expresses his disapproval of the 144 coloured plates in Professor Penzig's book, but, though inexpensively reproduced, and not very artistic as to colouring, they are excellent in drawing, and show clearly the characters of the plants. Now the figures in Mr. Thompson's book are very charmingly drawn and coloured, but have been reduced to such microscopic dimensions that one feels the size must be as great a trial to the proper pride of the clever artist and botanist who drew them, as it is to the eyesight of the average reader.

Such plants as Crucianella maritima, Onobrychis Caput-galli, and Ruta angustifolia might have been more usefully portrayed if a smaller portion of the original drawing had been reproduced on a larger scale, after the plan used in the admirable line drawings in the Abbé Coste's *Flore de France.*

The text shows an intimate knowledge, not only with this recent work, but also with the other good books mentioned in the preface, and dealing with the various portions of this rich and interesting flora. But, besides that, there is abundant evidence, especially among the plants of the Var district, of original personal knowledge of the plants at home. For anyone then who is not prepared to carry half a dozen large volumes with him on his wanderings in this region, Mr. Thompson's book should prove a useful and sufficient floral guide.

It has been very carefully prepared and printed, and is wonderfully free from misprints and errors. *Tiger Lily*, as the English name of Lilium croceum, the word *glaucose* in the description of Capparis spinosa, and a *not* that seems to be doing duty for the word *hot* under Ecballium, call for revision. One hopes it may not be long before a similar volume appears, dealing with the plants of the higher ranges of the Maritime and perhaps the Ligurian Alps; but in the meanwhile this one ought to serve the purpose of attracting those who have not yet visited the region to the study of the beautiful and interesting wild plants of the Riviera.

TREES AND SHRUBS.

HARDY BAMBOOS DURING THE PAST SEASON.

Although the past summer has been a rather dry one, hardy Bamboos have made very satisfactory growth in many instances, especially where the plants were liberally mulched early in the summer and given copious waterings during the dry weather. A season like the past is undoubtedly favourable to Bamboos providing that they are supplied with moisture at the roots, though without such a supply the growth would probably be comparatively meagre.

With us some young plants of Arundinaria nobilis raised from seed collected in the open garden here have thrown up a number of young culms to a height of 8 feet. These growths were made rather late in the season, however, so it remains to be seen how they will survive in the event of a severe winter. It is most desirable to encourage growth fairly early in the season, for then it has a much better chance of becoming matured before sharp frosts and snow are experienced.

Phyllostachys sulphurea, a rather uncommon species of noble aspect, has produced very gratifying results. Hitherto our plant was rather small, and during the three years it has occupied its present position it had made very little growth; this season, however, the erect spear-like culms attained a height of 12 feet by the end of July; but I believe this Bamboo is capable of far more extended growth. The culms are now well branched and the leaves developed.

---

* *Flowering Plants of the Riviera.* By H. Stuart Thompson, with Introduction by A. G. Tansley, M.A. (Longmans, Green & Co., London, 10s. 6d.).

P. marliacea is a vigorous species, after the style of P. Quilioi; when fully developed the stems are well branched and inclined to be pendulous. P. viridi-glaucescens is one of the best Bamboos; it succeeds in most gardens where these graceful plants thrive, and never fails to make vigorous growth annually. P. flexuosa is something similar to the above, but not quite so vigorous. In P. Henonis we have one of the most graceful plants in the genus; its beautiful waving plumes invariably compel admiration. This year the plants have thrown up their young culms to an unusual height. P. fastuosa, the noblest species that is hardy in our climate, has made considerable progress, and is increasing its tendency to run at the root. Some of the new culms have attained a height of 16 feet, although I am aware it grows taller in some gardens. This Bamboo is very upright in growth, and a large group creates an imposing effect when set in the midst of more dwarf varieties.

In Arundinaria nitida we have one of the most attractive Bamboos; its graceful aspect and dense masses of fine green foliage render it suitable to grow as an isolated specimen on the lawn. When given congenial conditions a small plant will soon attain large proportions. Some of our specimens have reached a height of 15 feet and are 8 feet in diameter at the base.

A. anceps is equally desirable for an isolated position. The dense plumose growths are a feature of this species, and as the rhizomes are very active it spreads rapidly and soon forms an imposing object.

A. spathiflora is somewhat similar in appearance, but does not spread so quickly. A. racemosa and A. aristata have several points in common, but of the two I prefer the latter. This Bamboo has reached a height of 11 feet with us; it makes a good specimen plant, and its purple branchlets are an attractive feature. Phyllostachys violascens is another distinct species, which makes satisfactory growth every year. Unfortunately it does not take very kindly to our climate, and a certain number of the growths die annually. However, the purplish-violet culms are conspicuously beautiful when seen at their best.

Early in May is the best time to plant hardy Bamboos; they require a sheltered position and prefer deep, rich and moist soil. *J. Gardner, Batsford Park Gardens, Gloucestershire.*

PYRACANTHA ANGUSTIFOLIA (COTONEASTER ANGUSTIFOLIA, Franchet).

There is no doubt that Franchet erred in placing this shrub in the genus Cotoneaster. It is similar in all generic essentials to the well-known "Pyracanth" of gardens—Pyracantha coccinea or Crataegus Pyracantha. It first became known to English cultivators through M. Maurice de Vilmorin, in whose fine collections at Les Barres I saw it six years ago in great beauty. About that time it was shown before the R.H.S. and given a First-class Certificate. From its behaviour for a few years after its introduction to this country, many people were inclined to consider its merits had been rated too highly, for it did not bear fruit freely. This, probably, was due to juvenility, for during the last few years it has made a brilliant display each autumn. On the whole, as an evergreen for walls, it is superior to P. coccinea, chiefly because of the long-persisting nature of the fruits, and because birds do not touch them. P. coccinea has for several weeks been denuded of its fruits, but P. angustifolia is not only in full beauty, but will remain so until next March. The fruits are of about the same size and shape as those of the older species, but of a yellower shade. Its foliage differs, in being narrower, more downy, and often without teeth. It is not so hardy as P. coccinea, and near London will not succeed permanently away from a wall. It is a native of Western China. W. *J. B.*

The Week's Work.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Chrysanthemums.—When the flowering is over cut the stems down to within 4 inches of the pot and store the plants in a light frost-proof house to furnish cuttings. Bush varieties are flowering freely, and may be arranged in groups in the conservatory or greenhouse. Employ a little fire-heat and admit air to keep the atmosphere buoyant. Plants not yet in flower may be fed with a little weak soot water until the blooms expand. No hard and fast rule can be laid down as to the best time for inserting Chrysanthemum cuttings. It is always advisable to insert as many of the specimen Japanese and incurved varieties as can be procured by the first week in December. To root them earlier than this may result in buds developing precociously in May. On the contrary, if rooted in January the plants will not have a long season of growth, and will be dwarf with inferior flowers. My system is to dibble the cuttings of Japanese and incurved varieties around the sides of 3-inch pots; bush varieties may be rooted in boxes. The soil may consist of one part loam and the remainder equal amounts of leaf-mould and sharp sand. Select only healthy cuttings, and from near to the base of the old stool; make them about 4 inches long. They may be rooted in a propagating case placed close to the roof-glass in a house, or in a portion of a heated frame partitioned off so as to be made nearly airtight. Make up the bed with a staging of boards to within 14 inches of the glass, covering the boards with a layer of ashes which will keep the frame uniformly moist. The temperature should be 45° to 50°. Moisture condensed on the glass must be removed once daily. When rooted, grow the cuttings on a shelf near to the roof-glass, and prevent draughts, which would cause mildew to attack the leaves. Dust the tips of the shoots with tobacco powder or syringe them with a weak insecticide to destroy aphis. Bush varieties for general purposes may be propagated in January.

Streptocarpus.—Water the roots of Streptocarpus sparingly in the winter, but do not allow the soil to become dust-dry.

Schizanthus.—Seedling Schizanthuses should be transferred to 3-inch pots, filled with a light, sandy compost. Grow the plants in a cool frame, but protect them from frost.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Vinery.—In starting vineries regulate the temperature with extreme care. When the weather is not favourable for admitting air employ less fire-heat; but on mild, sunny days, the temperature may be increased. As soon as the buds have burst the temperature on mild nights may be 60°, with a corresponding rise during the daytime. As soon as the leaves of later vines have fallen and the bunches cut, the plants may be pruned. Some of the healthiest and best-matured wood may be saved to furnish eyes for propagating purposes. See that the outlets of the main drains of the border are clear of soil and rubbish. Outside borders must be protected from rains, or the roots will be too wet and cold.

Cucumbers.—Young Cucumbers planted at the end of August or early in September are making satisfactory growths, and should be encouraged to grow freely for the present. Watch the condition of the plants carefully, and directly the leaves assume a light green colour, or become curled, feed the roots with a little soot water, or some other weak stimulant. Old plants that are still fruitful should be retained for a time, as they sometimes continue to crop well until early in spring. Exercise care in the removal of old shoots, and apply a little powdered charcoal and flowers of sulphur to the cut surfaces to prevent rotting. Furnish the space with as many young shoots as possible, and remove old and unhealthy leaves. From time to time top-dress the roots with a little fresh soil, which should be warmed to the temperature of the house. It is sometimes an advantage to remove a portion of the old soil and replenish with fresh compost.

Peaches and Nectarines.—If ripe fruit is required in May close the house now, but do not employ fire-heat for a week or two afterwards. The night temperature should not exceed 55°, but during the day it may reach 60°, provided plenty of air is admitted. Syringe the trees twice daily with tepid water, and keep the surface of the border moist, especially the part next to the hot-water pipes. If evaporating troughs or pans are placed on the hot-water pipes there will not be so much need to damp the border and paths. The outside borders may be covered with fermenting materials to warm the soil and thus stimulate the roots; but the material must be protected from rains by placing sheets of corrugated iron or tarpaulin in position.

Plums in Pots.—If there is no special house for growing Plums in pots the trees may be forced in any suitable house, where the temperature does not exceed 45° at night and 50° by day — unless by sun-heat — until the blossom expands. When the fruit is set the temperature may be increased to 60°; and after the fruits have stoned it may be raised to 65°. Admit plenty of air during mild weather. The trees should be syringed lightly overhead at least once daily until the flowers expand, when a dry air is best; but syringing may be resumed after the fruit has set. See that the soil is never dry, as drought at the roots would cause both the bloom and the fruit to drop prematurely. The following are all excellent varieties for growing in pots:—Yellow: Early Transparent, Oullin's Golden Gage, Golden Transparent, Jefferson's, Coe's Golden Drop, Denniston's Superb. Purple: Kirke's, River's Early Prolific, Czar, Coe's Violet, De Montfort, and Reine Claude Violette.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Dendrobium.—Certain Dendrobiums are showing their flower-buds, which develop on the side of the pseudo-bulb opposite that from which the old leaf has fallen. The earliest plants should be removed from their resting quarters and encouraged to develop their flower-buds by suitable treatment. It is not desirable to place the plants immediately in a very warm house, but they should be gradually inured to warmer conditions commencing with the intermediate house. Only sufficient water will be required at the roots to keep the pseudo-bulbs just plump. It is not expected that growth will be very fast at this season, and there is no advantage in trying to stimulate it by placing the plants in considerable heat or watering them liberally. Excess in either of these details will militate against successful flowering, for instead of flowers side-growths will develop. There is a greater danger in this respect with the early-flowering kinds than with those that bloom later in the year. The past season has been very favourable for the developing and ripening of the plants, but there are certain kinds of Dendrobium which start to grow from the base, even before the old growth is matured. This is particularly true of D. Wardianum and many of the hybrids which have been derived from that species. It is advisable to disregard these precocious growths during the time the plants are ripening and shedding their leaves. When the plants are grown under cooler, more airy and drier conditions some of the leaves on the secondary growths may decay, but as soon as the flowers develop and the plants receive liberal treatment these secondary growths will develop with renewed vigour and form satisfactory pseudo-bulbs for next season's flowering. D. formosum giganteum has finished flowering; the roots should be kept moderately dry, but the plants should not be subjected to a cool treatment during their dormant season. A light position in the Cattleya house is suitable for this Orchid, which requires to be grown within a reasonable distance of the roof-glass at all seasons.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Conifers.—Specimen Conifers should be kept clear of Ivy, Brambles, and other plants that would interfere with their growth, and all secondary leaders should be removed forthwith.

Mid-season Chrysanthemums.—Plants that have been grown especially for providing cut blooms may be lifted from the garden and planted in any kind of soil on the floor of a Peach house or vinery. Give the roots one good watering and the blooms will continue to open as though the plants had been undisturbed. Ventilate the house freely but not on frosty nights. As the varieties pass out of flower dig up the old stools of any that are required for stock purposes, plant them in pots or boxes, and place them in a cold frame, which should be well ventilated. The object is to rest the plants until the spring, when the crowns may be pulled to pieces and prepared for planting out in April. Young side growths detached from these old plants flower earlier and better than those raised from cuttings.

Transplanting Shrubs.—In transplanting large shrubs it is necessary to remove them with a good ball of soil. Take out a trench 4 feet from the stem and work the soil from under the roots until the plant can be pulled over with the side branches touching the ground. Push a couple of stout planks underneath the ball to permit of the shrub being lifted and placed on a low truck without sides. By means of a stout rope the plant can be brought in an upright position and the whole mass weighing several hundredweights removed with safety and ease. See that the hole for planting is made much larger than the ball of earth and roots, and arrange a quantity of fresh loose soil at the bottom so that the plant rests firmly on its base, for if spaces are left they cannot afterwards be filled in properly. The heaviest side of the tree should be set facing west, for it is from that quarter that gales and high winds may be expected. Make the plants secure to stakes, placing three stakes to form a tripod with the stem in the middle. In tying allow for the roots to settle a little in the soil.

Fallen Tree Leaves.—Most of the deciduous trees have shed their leaves, and the latter should be swept up and placed in a heap to form leaf-mould. The leaves will be useful for a variety of purposes, including the making of hotbeds, for when mixed with stable litter they decay slower than the dung, and thus the heat of the bed is more lasting.

Protecting Plants.—There are certain species of plants which will survive the cold of ordinary winters, but can only be regarded as semi-hardy, and need a slight protection. This may be afforded by placing dry, freshly-fallen tree leaves over their crowns, keeping the leaves in position with a few light tree branches placed over them. Plants which need protection in this way include Montbretias, Antholyzas, Clematis Davidiana, Romneya Coulteri, Caesalpinia japonica, Nandina domestica, Olearia macrodonta, and Daphne collina. In order to make certain that cold will not harm the plants it is advisable to arrange a few pieces of bracken Fern through and around the head in addition to covering the crown and roots with leaves. It is my custom to protect newly planted Tea and H.-T. Roses for the first winter in this manner, removing the protective material about March, that is, just before growth commences. It is astonishing what a considerable amount of frost a few dry, loosely-placed leaves will ward off, the leaves merely held in position by a few sprigs of the common Yew. Whenever we plant new varieties of shrubs, at Madresfield Court, whether they are hardy or only semi-hardy, we always afford a slight protection until they have become acclimatised, for it must be remembered that the treatment these plants receive when they are propagated and subsequently grown in batches in sheltered situations tends to make them somewhat tender. It may be stated that Madresfield Court is only 130 feet above the sea level, and the atmosphere is generally very humid, so that when frosts occur they are more harmful to vegetation than in drier districts.

Climbers.—The pruning of climbers may be commenced, for there is always a great pressure of such work in the spring. Subjects that may be attended to now include Roses, Clematis, Figs, Pomegranates, Wistarias, Berberidopsis corallina, Bridgesii spicata, Lonicera, and Periploca graeca. In trimming the shoots allow some of the young growths to extend, for the purpose of taking the place of any branches that have become exhausted.

Top-dressing Certain Plants.—There are certain flowering plants, including Auriculas, Polyanthus, Lychnis, Heuchera, and some species of Saxifragas, which grow leggy above the ground in consequence of their root-stocks lengthening, and these should have a quantity of fresh, sandy loam and leaf-mould placed about them.

Hellebore.—Christmas Roses are developing their flowers, which should be protected from damage by rains or frost by placing handlights over them.

Bulbs.—Guard against mice injuring bulbs in the pleasure grounds, and where pheasants are plentiful, place rabbit wire in position to prevent the birds from picking the bulbs out of the ground.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Planting Apple Trees.—The Apple may be regarded as the most important of our hardy fruits, and it is possible to maintain a supply during nine or ten months of the year. In old gardens, trees that have become worn out and others of inferior varieties should be replaced by standard sorts and some of newer introductions. Much has been written lately on the need for restricting the number of varieties grown, and although this is sound advice for those who grow for the market, the private gardener who has to maintain a succession of fruits over the longest possible period, should plant a considerable number of sorts. Moreover, the varieties do not all flower at the same time, and thus certain kinds may escape injury by spring frost. Again, all varieties do not bear equally well the same season; thus when a good selection is planted there is a better chance of securing an average crop. It is not possible to lay down a definite plan for planting, as each garden requires individual treatment, but it is usually most convenient to plant Apple trees by the sides of the main paths. In some cases it may be found best to plant the trees in large batches, a system that is largely followed by market growers who grow great breadths of one variety. Fruit trees planted by the side of the paths not only divide up the garden conveniently, but the plan also admits of the trees being easily attended to, beside making the kitchen garden interesting. Of the various kinds of trees, the pyramid and the dwarf, open bush are the best to plant, not only because of the ease with which they may be attended to, but also because the fruits in the middle of the trees receive the benefit of sunshine and air. Standards are quite unsuited for small or medium-sized gardens, as they take up too much space and shade the ground very considerably. But dwarf bushes may be planted fairly closely together, thus affording each other a certain amount of protection and also acting as a screen to other crops. They should be set at a distance of about six feet from the path, and about eight or nine feet from tree to tree. The interspaces may be planted with bush fruits, the latter to be removed when the Apple trees require the room. Trees three or four years old are the most suitable for planting, and they soon give a good return. The Apple will grow in any good garden soil, but if the site has been previously occupied by a fruit tree the station should be specially prepared by removing some of the old soil and replenishing with fresh compost, consisting of rich loam, mixed with wood ash and charcoal. Plant firmly, and see that the roots are not set too deeply, observing the soil mark on the stem and allowing for the soil to settle a little. The following varieties may be recommended for planting :—Culinary : Emneth Early (syn. Early Victoria), Lord Grosvenor, Stirling Castle, Ecklinville Seedling, Golden Spire, Golden Noble, Rev. W. Wilks, Hambling's Seedling, Loddington (syn. Stone's Apple), Warner's King, Lord Derby, Queen, Gascoyne's Scarlet, Lane's Prince Albert, Sandringham, Tower of Glammis, Blenheim Pippin, Mère de Ménage, Norfolk Beauty, Alfriston, Bismarck, Annie Elizabeth, Bramley's Seedling, Newton Wonder, Royal Late Cooking, Barnack Beauty, Norfolk Beefing, Northern Greening, and Dumelow's Seedling (syn. Wellington). Dessert : Irish Peach, Beauty of Bath, Langley Pippin, Lady Sudeley, Worcester Pearmain, Devonshire Quarrenden, James Grieve, King Harry, Washington, Charles Ross, Rival, King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Margil, Allington Pippin, Adams's Pearmain, Ashmead's Kernel, Wealthy, American Mother, King of Tompkins County, Melon Apple, Claygate Pearmain, Lord Hindlip, Reinette de Canada, Brownlees's Russet, Lord Burghley.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Endive.—Although Endive is hardy the leaves become damaged by frost, and any plants still in the open should be lifted and placed in frames without delay. The roots will not need watering, provided the ball of soil is moist. Protect the plants from severe frost and rains, which would cause them to rot. The leaves may be blanched in several ways, one of the oldest systems being to place a slate or tile over the plant. Another way is to tie the leaves together, or the frame may be shaded to exclude the light; but much the simplest plan is to transfer as many plants as are needed to maintain a supply for some time, to the cooler part of the Mushroom house.

Tomatos.—Make a sowing to raise plants for cropping early next summer; Sunrise is one of the most reliable varieties for the purpose. The soil should be very porous and may consist of equal parts loam and leaf-mould, which has been first passed through a sieve with a quarter-inch mesh. If the soil in the seed-pan is soaked with warm water a few hours before the seeds are sown, further waterings will not, as a rule, be necessary, until the seedlings are through the soil. Let the seeds be set well apart and germinate them in a brisk temperature. Cover the seed-pan with glass or paper until the seedlings appear, and let the latter be well rooted before they are transplanted.

Liming Ground.—The value of lime in the garden has, after many years of neglect, again been recognised, not only for improving heavy ground, but also for benefiting light soils which have been enriched heavily with animal manures. But instead of the old-fashioned, heavy dressing, use only a slight sprinkling and repeat the dressing at intervals of a year or two. Let the lime be placed in a shed until it is thoroughly air slaked, and then pass the material through a sieve to free it from stones By reducing the material to powder before it is distributed over the surface it is possible to apply it in an even layer. Although some farmers do not use a greater quantity than one hundredweight per acre, two or four times that amount may be employed advantageously in gardens. It may seem superfluous to some to state that lime should always remain on the surface, but I was asked recently how deeply it should be dug into the ground to produce the best results! Lime is of additional value as a pulveriser of heavy, close land, now that animal manure is so difficult to obtain. It exerts very much the same kind of influence on heavy ground as does burning some of the latter, only its effects are of a less lasting nature.

Weeds.—The ground should be made clean and put in good order for the winter by digging in very lightly with a spade seedling weeds and rubbish. The weeds need not be dug in more than three or four inches deep, and a capable workman will clean a considerable area of ground in this way in a single day. First clear the alley or pathways between the crops with a spade, and remove by hand-picking the weeds in the row.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS.

[*In the following list of Appointments we have omitted the Chrysanthemum Shows which we have reason to know have been abandoned. It is possible that some of those enumerated may not be held, although we have no information to this effect.*]

MONDAY, NOVEMBER 30—
Nat. Chrys. Soc. Final Com. meet. National Dahlia Society annual meet. at Hotel Windsor, Westminster, at 4 p.m.

TUESDAY, DECEMBER 1—
Roy. Hort. Soc. Coms. meet. Scottish Hort. Assoc. meet.

WEDNESDAY, DECEMBER 2—
Perpetual Fl. Carnation Soc. Sh. at R.H.S. Hall, Westminster. B.G.A. Ex. Council meet.

THURSDAY, DECEMBER 3—
Linnean Soc. meet. Women's Agric. and Hort. International Union annual meet. at Bedford College, Regent's Park.

FRIDAY, DECEMBER 4—
Dundee Hort. Assoc. meet.

WEDNESDAY, DECEMBER 9—
Nat. Chrys. Soc. Show and Conference at Essex Hall, Strand.

TUESDAY, DECEMBER 15—
Broughty Ferry Hort. Assoc. meet.

THURSDAY, DECEMBER 17—
Linnean Soc. meet.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 41.1.

Actual Temperatures :—
London, *Wednesday*, November 25 (6 p.m.): 45°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: *Thursday*, November 26 (10 a.m.); Bar. 29.3: Temp. 53°. Weather—Dull.

SALES FOR THE ENSUING WEEK.

MONDAY, TUESDAY, WEDNESDAY, THURSDAY AND FRIDAY—
Dutch Bulbs, by Protheroe and Morris, 67 and 68, Cheapside, at 11 a.m.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Bulbs, Perennials, etc., at Stevens' Rooms, 38, King Street, Covent Garden, W.C.

MONDAY—
Nursery Stock at Surbiton Nurseries, Long Ditton, by order of Messrs. J. Naylor and Sons, by Protheroe and Morris, at 12.

WEDNESDAY AND THURSDAY—
Nursery Stock at Garforth Nurseries, near Leeds, by Protheroe and Morris, at 11.

WEDNESDAY—
Trade sale of Liliums at 3.30 p.m. Bulbs and Plants at 1, by Protheroe and Morris.

THURSDAY—
Roses, by Messrs. Protheroe and Morris, at 1.

FRIDAY—
Herbaceous and Border Plants, Roses, Fruit Trees, Bulbs, etc., by Protheroe and Morris, at 11.

Productive Orcharding.

The book on this subject, written by Mr. Fred C. Sears,. Professor of Pomology at the Massachusetts Agricultural College,* is a notable addition to the fruit-grower's library. Although based on experience in the United States and on the system of fruit culture practised in that country, there is much in it instructive and interesting to British fruit-growers. Moreover, while calculated to afford valuable information to growers of fruit, it is also adapted to use in horticultural departments of colleges and schools. Its instructions, obviously based upon experience and careful observation, are rendered the more impressive by the argumentative form in which most of them are given. The author does not dogmatise in a dictatorial manner, but gives reasons for his directions, and on disputed questions he sets forth fairly the arguments of those who differ from him. His judgments will generally commend themselves to experienced growers, although there will always be differences of opinion upon some of the details of fruit culture. The use of scientific terms is almost entirely avoided, so that the least educated of American readers will easily understand every sentence. For British readers there is one disadvantage in this connection, namely, that they are not familiar with some of the popular American designations of insect and fungous pests. The work is comprehensive so far as orchard trees are concerned, but it only incidentally mentions small fruits, which are not commonly grown in American orchards. Very numerous and excellent illustrations add greatly to the value of the book.

In the opening chapter, on "The Outlook for Orcharding," Professor Sears presents some astonishing statistics by way of showing that there is no immediate danger of fruit-growing in the United States being overdone, at least so far as Apples are concerned. According to census figures the greatest production was 69,000,000 barrels in 1896. That season, no doubt, was one of extraordinary productiveness; but the nearest to the maximum was 60,500,000 barrels in 1895, and since 1896, of course with great fluctuations, there has been a great decrease, down to 28,600,000 barrels in 1911, while the population has increased enormously. Since 1906 the quantity has not once reached 30,000,000 barrels, if the census statistics are to be trusted. The first illustration after the frontispiece depicts an orchard of trees killed by scale and neglect, which the author says represents thousands of others. This is noticed as one reason for believing that Apple growing in the United States is not likely to be overdone; at least, not for many years to come. Numbers of men devoid of knowledge of fruit-growing, it is explained, have gone into the industry, with lamentable results. Another preventive to over-production, he adds, is the constant increase of insect and fungous pests.

From a British point of view the least satisfactory chapter in the book is the one on soils for orchards. Geological formations in this connection are ignored, and the long quotation from an officer of the Bureau of Soils in reference to the soils regarded as respectively suitable to the principal varieties of American Apples is of interest only to American readers.

The author appears to be only partially impressed with the value of wind-breaks. Their only advantages which he mentions are the comfort which they afford to pruners and other workers in orchards during the winter, and the benefit of shelter from strong wind when spraying is being done. The enormous difference in the growths of sheltered and unsheltered trees, particularly in their young stages, and the heavy loss from windfalls in plantations not protected against gales are ignored.

Remarks on the selection of varieties of Apples relate, of course, only to those grown in the United States; but sound advice to a beginner in fruit-growing is to plant extensively only varieties known to flourish in his district and popular in the markets, allowing for only a few trial rows of other kinds. With respect to the age of trees to be planted, preference is accorded to maidens, mainly on the ground that they can be headed back to the height at which each grower desires his trees to branch out, for which purpose there are vigorous young buds on a maiden, as contrasted with dormant buds on the stem of an older tree, grown lanky, perhaps, in its nursery bed.

The preparation of the soil for planting, described in the chapter on that subject, will strike British growers as insufficient. There is nothing about subsoiling, and in the case of planting after permanent pasture a single ploughing is indicated as all that is necessary. "Let the sods and trash stay underneath where they belong and where they will decay," the author says. But will they stay there? It is true that the reference is to autumn ploughing and spring planting; but the turf would surely be turned up where every tree was planted, and, more or less, all over the orchard, in the spring and summer cultivation. Surely there should be an intervening crop, such as Beans, for example, between permanent grass and fruit.

It is interesting to notice that Professor Sears does not follow the practice recommended by some writers of deferring the cutting-back of newly-planted trees till the second season after the planting. Ample reasons are given for preferring low-headed to high-headed trees, which there is no need to specify, as they are familiar to horticulturists. With respect to "fillers" between trees planted 30 feet to 40 feet apart, as they are usually in the United States, the author admits that it is a great advantage to plant varieties which fruit early, provided that the planter is resolute in removing them as soon as the permanent trees encroach upon them. In too many cases, he says, growers do not screw up their courage to the sacrifice of profitable "fillers," and overcrowded orchards are the result. It may be explained that Apple trees, as a rule, grow to a much greater size in the United States than in this country.

Considerable space is devoted to cover crops, sown in arable orchards in the autumn, to be ploughed in after the end of the winter. The cultivation of fruit plantations is dealt with in a manner very interesting to British readers, the illustrations of the implements used being particularly instructive. But with all their aptitude for labour-saving contrivances, American growers do not appear to have brought out a cultivator worked by a motor low enough to run close to branching trees without doing the damage which horses, traces, and whipple trees inevitably cause.

---

* *Productive Orcharding.* By Fred. C. Sears (6s.). J. B. Lippincott Company, Philadelphia and London.

The author is strongly in favour of fruit-growing on arable land, as opposed to "sod culture," but fairly sets forth the advantages claimed for the latter, admitting some of them.

In this notice of a comprehensive work adequate attention cannot be given to the instructive chapters on pruning, insects and diseases, spraying, fruit thinning, picking, storing Apples for long keeping, packing, and marketing. There are points in some of these chapters which are open to criticism, such as the recommendation to spray the Apples with lime-sulphur, a wash which is not effective unless used at a strength which would destroy leaves and blossom buds, if even then. With the great majority of the recommendations in this valuable book, however, English gardeners will cordially agree.

Coloured Plate.—The subject of the Coloured Plate to be published with the next issue is Carnation "Wells' Champion."

Royal Horticultural Society.—The next meeting of the committees will take place on Tuesday, December 1, in the Hall, Vincent Square, Westminster. At the three o'clock meeting in the lecture hall an address on "The Cooking of Leaf Vegetables" will be delivered by Mr. C. Herman Senn.

National Dahlia Society.—The annual general meeting of the National Dahlia Society will be held at the Hotel Windsor, Westminster, on Monday, the 30th inst. The President, Mr. Reginald Cory, will occupy the chair.

War Items.—Buyers from Norway and Sweden are making speedy contracts in the United States for the delivery of choice dried Apples. Hitherto Russia has supplied Scandinavia with the bulk of its imports of this nature.

—— In August last certain recommendations were made by the Royal Horticultural Society and in these columns with a view to increasing the food supply of the nation by raising green crops, and certain firms and private growers were induced to raise large quantities of seedling plants for distribution to small holders and cottagers. Messrs. J. Carter and Co., Raynes Park, inform us that they have still available large numbers of these plants, and they invite all who are desirous of obtaining consignments to send particulars of their requirements.

—— I have heard during the past week that my son Alfred and Mr. Ernest Clarke, gardeners in the employ of M. Pauwels, Everberg, Belgium, are safe and well there. In addition, there are two young journeymen gardeners in the employ of M. Pauwels who are well and continuing in his service. As they have no means at present of communicating with their friends, the latter will be relieved to hear of them through the medium of the *Gardeners' Chronicle*. I have not their names, but one of the young men went to Everberg last year from Durham, and the other, we think, from Reigate. *G. W. Cummins.*

Trading with the Enemy.—Evidence exists that seedsmen in Germany are endeavouring to introduce their seeds into this country through indirect channels. It is necessary, therefore, to warn all seedsmen and other horticulturists that the purchase of such goods is contrary to law. In the event of any attempt being made to pass off upon them seeds of German origin they should communicate at once with the Board of Trade.

The German Camp at Longmoor.—A short time ago a communication reached us from Mr. Wilmot H. Yates, head gardener at Rotherfield Park, Alton, Hampshire, inviting us to visit the German prisoners' camp at Longmoor, where he is at present officiating in the rank of corporal. The novelty of the situation led us (a party of three) to accept the invitation, and it was suggested that the visit should take place on a Saturday, when the men, having finished work for the week, were "At Home" after 1 o'clock. We travelled by a train from Waterloo to Bordon and thence to Longmoor, a distance of six miles. The camp is situated on the fringe of common land of the type used for military purposes over many square miles in the Aldershot district. From the road, which passes the camp at a distance of twenty yards or so, the bell-tents are plainly visible. The tents are arranged in rows and each accommodates eight men. The total number of prisoners is 200. There are other tents outside the camp for the use of the 50 British troops forming the escort. The weather being bitterly cold we were glad to find that each tent was provided with a boarded floor, for in such things the prisoners and the escorts are treated fairly and equally. The camp is surrounded by an inner and an outer fence of barbed wire; in one case the fence bends over at the top towards the camp, making it the more difficult of climbing. At each corner is placed a powerful acetylene light, so that during the whole night the camp is illuminated, and both by day and night armed sentries come and go with a regularity that is monotonous. Most of the prisoners, of course, still wear the blue-grey uniforms and red-crowned hats in which they were fighting at the time of capture, the exceptions being those who had but little clothing left and therefore were glad to accept civilian garments provided by the authorities. The single representative of the famous Uhlans is certainly one of the most powerful men in the camp. They are all certainly treated with true British regard for humanity and fairness. In their captivity they have behaved so circumspectly that they have gained the entire confidence and unstinted commendation of the commanding officer. They have plenty of good food, which they cook themselves in their own way, and they enjoy a certain amount of liberty; for instance, we saw two of the prisoners with an escort start off for the shops to purchase "extras" for many of the men. Two of the men speak English perfectly and they act as interpreters for the others. Their temper is perfect and they seem willing enough to satisfy civilian curiosity. One man was diligently cutting at a piece of wood, which he was evidently fashioning into some particular shape, and when we stopped for a moment he suddenly put the wood on the ground, and placing his foot upon it smilingly looked up. He was making a pair of clogs. In their personal habits and their cooking and living the commanding officer described them as scrupulously clean. They work for forty-eight hours a week on military railways and rifle butts, for which work they receive 4s. a week. On this Saturday afternoon some were making small wooden windmills, which they fix to the top of the pole at the centre of the tent, so that look where you will there are these toy windmills in ceaseless motion. Others were engaged in forming or tending "German" gardens, which they have formed at the entrance to most of the tents. The soil of the district is sandy, as at Aldershot, and seedling Conifers are everywhere abundant. The Germans have lifted young plants of Scots Fir and planted them about their tents, and then with tufts of short grass they have formed tiny lawns and with stones have marked out the word "Kaiser" and other German words, whilst one at least has tried to make a model of the Emperor's palace. These gardens indicate the temper of the men, their freedom from sullenness and their attempts to make the best of their prison. Corporal Yates, a territorial for many years, volunteered for active service in Britain or abroad immediately on the outbreak of war. At present his duty is at Longmoor, where he keeps all the accounts, assists in paying the men, and carries out the duties of a corporal. Being so close to Rotherfield, Corporal Yates is able to inspect his garden once a week, thus looking after his employer's interests whilst he gallantly serves his King and country. *P.*

CORPORAL WILMOT YATES

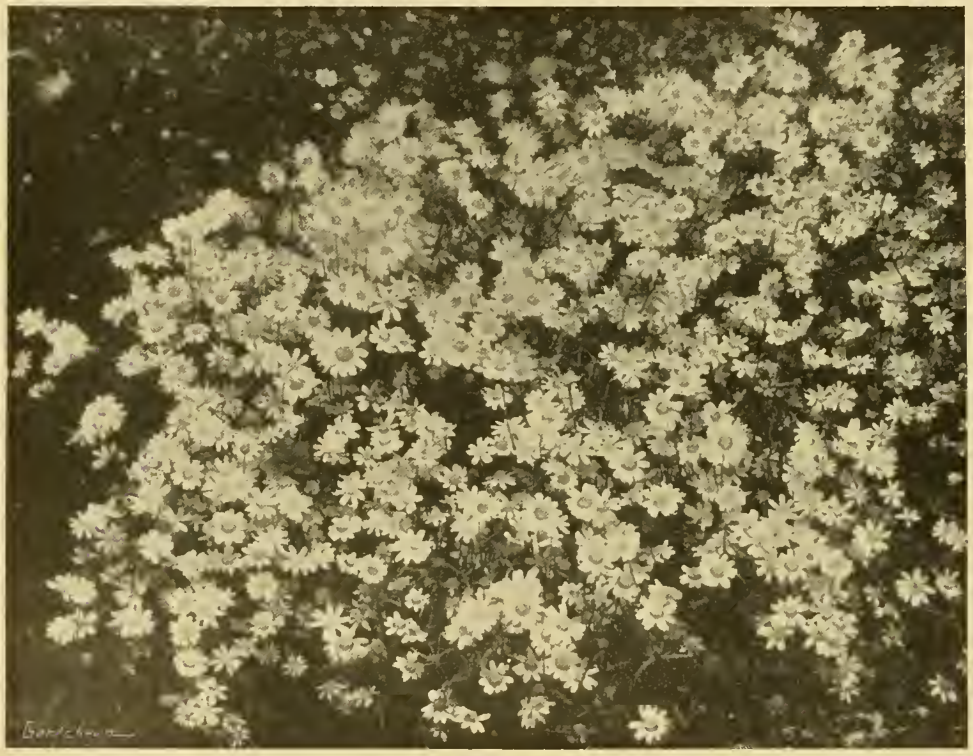
Hyacinths.—Certain Continental nurserymen have complained of the competition of Dutch bulb growers, who send to the market cut flowers grown on their bulb grounds; at the same time they recognise that some of the large firms of Haarlem and Lisse have dissociated themselves from this trade for years past. A convention has now been made between associations of Dutch producers, who undertake not to place the cut Hyacinths from their grounds into the market after March 1 in the years 1915 and 1916; and a long list of adherents to this convention is published in the Dutch papers. The promoters of the movement propose also to publish the names of those who refuse to conform to the decision.

Late Vegetables. In respect to Messrs. Sutton and Sons' fine exhibit of produce grown since the outbreak of war (see p. 342), we are informed that the council of the R.H.S. substituted a Silver-gilt Knightian Medal for the Silver-gilt Banksian Medal awarded by the Fruit and Vegetable Committee.

Perpetual-flowering Carnation Society.—The seventeenth exhibition of the Perpetual-flowering Carnation Society will be held on Wednesday, December 2, in the Royal Horticultural Society's Hall, Vincent Square, Westminster. The profits of the show will be handed to the Belgian Relief Fund, and flowers will be sold for the benefit of this fund. Belgian horticulturists and their friends will be admitted to the exhibition free of charge. A conference will be held at 3 p.m., when the following papers will be read:—(1) "The Cardinal Points of Successful Carnation Culture Under Glass," by Mr. M. C. Allwood; (2) "The Construction of Greenhouses for Carnation Culture," by Mr. A. Harris.

SALE OF NURSERY STOCK.—Messrs. PROTHEROE AND MORRIS have just concluded a nine days' sale of the whole of the extensive stock of fruit trees of Messrs. VEITCH AND SONS at the Nurseries, Feltham, Middlesex. Many buyers attended from long distances. The catalogue comprised 5,000 lots, and having regard to present circumstances the result was successful. Messrs. PROTHEROE AND MORRIS had sold the freehold land, and this necessitated the disposal of the stock as possession had to be given at Lady Day next.

BAERIA CORONARIA.—The genus Baeria includes about seventeen species, of which all but one are annual. They are natives of Western North America, but only four or five are in cultivation in this country. B. coronaria is considered to be a native of California, having been recorded from that country by Nuttall; but Gray, in the *Flora of North America*, states that it has not since been found there in a wild state. It is a well-known plant in cultivation under the various names of Actinolepis coronaria, Shortia californica, and Hymenoxys californica; the species is figured in the *Botanical Magazine*, tab. 3,828, as Hymenoxys californica. B. coronaria is an exceedingly useful and free-flowering plant growing less than I foot high, the divided leaves having narrow segments. The individual yellow flowers are comparatively small, but make up in quantity what they lack in size. A warm and somewhat dry situation suits the plant. To produce the best results the seedlings should be well thinned at an early stage.



[*Photograph by W. Irving.*

FIG. 137.—BAERIA CORONARIA: FLOWERS YELLOW.

HOME CORRESPONDENCE.

(*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*)

FROST-CUT ALONSOA.—This charming and brilliant annual (fresh to me this season) has been a frequent source of interest to visitors. Even in its death through frost last Saturday, the 21st inst., it produced a further surprise, for along the slender stems, about $\frac{1}{8}$ inch in diameter, had grown in the night, one, two, or three thin plates of ice about $\frac{1}{2}$ inch wide, making the plant conspicuous among the other frost wreckage around. It would be interesting to know if this was an accident due to special exposure and moisture (over 1 inch of rain was measured for the 15th) or whether it is a distinctive characteristic of the genus. *F. E. Clark.*

THE LATE DR. M. C. COOKE.—I read with much interest your obituary notice of the late veteran mycologist, M. C. Cooke. One of his characteristics was humour both by word and by his pencil. In a letter received from him, dated November 14, 1912, referring to the published reports of his death, he says: "Eyesight bad, nearly all gone," and in reference to the report of his death he continues, "Not dead yet, almost as bad." Though the handwriting of this letter was somewhat irregular, the signature was as firm and distinct as ever it was. The humorous pencillings of some of the programmes of the Woolhope fungus forays will be remembered by many of his old friends. Of his remarkable memory an illustration was given in a notice of his work written two years ago, at the time of his reported death, and though somewhat lengthy may be worth repeating here:—"Only once in my life," he said, "did I find my work drudgery. I had been commissioned by the Society for Promoting Christian Knowledge to write a book explaining in popular terms Darwin's theories of natural selection, which had just been published, and were agitating men's minds. It was an arduous but interesting task, for the due performance of which I used a mass of data which I had collected during a period of fifteen years. As my various notes and memoranda were used I threw them in the waste-paper basket, because, knowing they were incorporated in the book, I had no further use for them in their loose form. Then one fine day when my book was completed I bound my MS. up in a bulky package—it was to be a six shilling book—and got into an omnibus at Holloway to take my work to the S.P.C.K. office. How it came about I don't know, but when I got out of the 'bus in Oxford Street I left the package behind and did not miss it till I got to the Society's offices. I reported my loss to the omnibus company and at Scotland Yard, advertised it in the newspapers, and offered a substantial reward for the return of the MS., but I never saw it again. Then I sat down and rewrote the book without the assistance of a single line of my fifteen years' accumulation of notes and memoranda, and it was published under the title of *Freaks and Marvels of Plant Life*." This book of 460 pages treats of sensitive plants, carnivorous plants, hygroscopism, mimicry, and other subjects, and is fully illustrated. *J. R. J.*

—— From your interesting account of the work of the late Dr. Cooke a good deal is omitted. This was to be expected, as Cooke did so much work that it would take a whole number of the *Gardeners' Chronicle* to give a complete record. I first met Dr. Cooke early in 1863, and I accompanied him for the first time as a friend on a botanical excursion to Bishop's Wood, Highgate, in July of the same year. I was then 28 years of age and he 10 years older. As I am now close upon 80, our first excursions were therefore 52 years ago. Dr. Cooke was an inveterate smoker, and when he was not pulling at his pipe he was singing. I was neither a smoker nor singer. Dr. Cooke at that time had noticed the larger fungi but little; he collected and studied the microscopic fungi, and was very keen on all animate subjects. He captured toads, frogs, newts and snakes. I was different, for my object was almost solely the larger fungi, which I collected for drawing and dissection. I had then been on this job practically all my life, as I began noticing fungi when I was quite a young child. The first fungus that attracted my attention was Coprinus atramentarius, in my father's garden; it was not present overnight, but it was there the following morning. It filled me with wonder. In 1863 I had a rather large collection of original drawings of the larger fungi, many without names, and these attracted Dr. Cooke a good deal; but for a good many years Dr. Cooke paid very little attention to them. The Society of Amateur Botanists, of which I was a member, met only for a brief time in Soho. The members met in the first-floor front room of Mr. Robert Hardwicke's bookshop in Piccadilly. Hardwicke published most of Cooke's earlier books. There was an engraved brass plate on the side of Hardwicke's door inscribed "Society of Amateur Botanists." I did this and presented it to the society. The society published printed "Proceedings," called the *Botanists' Chronicle*; it began in 1863 and ended in 1865. It was published monthly by A. and J. Irvine, 28, Upper Manor Street, Chelsea, price 1d. each number. I still have my copy of this work. Mr. (now Sir) W. T. Thiselton Dyer (a member) contributed to the second number; he wrote about Cinchona and vulnerary plants; in the third number he wrote of Australian, Cape and British floras. In this number Mr. James Britten, late of the British Museum, also a member, wrote about "The Mildness of the Season." My name also appears in the third number. It was in Mr. Hardwicke's room that the idea of *Science Gossip*, not mentioned by you, was hatched. This was at first a very successful monthly publication. It was Mr. Hardwicke's idea, and he was to be the publisher. He asked Cooke to edit it, and he asked me to contribute and produce an illustrated cover. No name was at first suggested for this periodical, but Cooke suggested as a good name *The Veil of Isis*. This made Hardwicke wild; he said he "was not going to cry rotten fish," and suggested "*Science Gossip* as a name that everyone could understand." I was asked to submit a design on paper for the cover. In this I introduced an eagle crouching on a rock, at the top centre; but Mr. Hardwicke would not have an eagle, because, ho said, an eagle was not a British bird. "Why not have an owl?" said he. "Everyone knows that an owl is British." And the owl was substituted. At last the block was drawn, approved by all, and engraved. On the publication of the first number someone wrote and pointed out that the shells at the bottom were twisted the wrong way. I had drawn them correctly on tho block, but, of course, they were reversed in printing, and so became wrong. Other faults were found by other critics, who wrote to Mr. Hardwicke, and the latter went for me "hot and strong." After Mr. Hardwicke had softened a little towards me he asked me to make a poster of *Science Gossip* to a large scale, with the errors corrected, suitable for pasting on walls as an advertisement. This I did at the British Museum, Bloomsbury. The owl with outspread wings was taken from an example then located at Bloomsbury. When Cooke's two volumes, called *British Fungi*, were published by Macmillan, and for which I made most or all the illustrations, Mr. Hardwicke turned sulky, because, he said, Mr. Cooke ought to have allowed him to be the publisher. This dispute soon resulted in Cooke retiring from the editorship of a journal that he himself had made. You say truly that Cooke's *Fungoid Diseases of Cultivated Plants*, written and illustrated for the Royal Horticultural Society, was "his last work," but he wrote me not long ago that he had other work complete in manuscript, and up to then unpublished. I believe that he started the Queckett Club, which still exists as a flourishing natural history society. In conjunction with Dr. Quelet, he wrote the book named *Clavis Synoptica Hymenomycetum Europaeorum*, a most useful book. It is a list of all the Mushroom tribe in Europe, and is in Latin. I was one of the revisers for the Press. This was a most difficult task—not on account of the Latin, but in the difficulty of checking the spelling of every word. *Worthington G. Smith.*

Potato Arran Chief (see p. 341).—When Mr. Cobb states that Arran Chief crops three times heavier than King Edward, Windsor Castle, or Up-to-Date he makes a statement that cannot go unchallenged. He may have found it so. If so, the only conclusion I can come to is that his stocks of King Edward, Windsor Castle, and Up-to-Date must have been worn-out ones. Given an equal chance Arran Chief might yield two or three tons per acre more than the others —that is the outside. I have before me now figures of a trial undertaken by Professor Seton in 1914, all with new seed, and I quote from it :—

	Tons	Cwts.	Qrs.	
Arran Chief	12	11	3	per acre.
King Edward ...	10	11	0	,, ,,
Dalhousie .... (Up-to-Date Type.)	11	17	3	,, ,,

Now, according to Mr. Cobb, Arran Chief should have given a yield of between 30 and 40 tons! I have not observed disease in Arran Chief, but it is very liable to second growth and running out—i.e., producing runners, as Northern Star in many soils did. It may settle down and get rid of these practices. I hope so. *W. Cuthbertson.*

Gas Tar as a Remedy for Mealy Bug on Vines.—In your issue for October 25, 1913, I described my method of dealing with mealy bug on Vines and gave particulars of my treatment, stating that only 5 or 6 mealy bugs had been detected during the summer and autumn of 1913. My experience during the past twelve months may be of interest, more especially to those who are still too timid to use tar on Vines. The houses and Vines were treated exactly as I described in my first note on the subject. In the process of scraping a few bugs were discovered on two rods only, the other Vines being quite free from the pest—at least, to the naked eye. The Grapes in 1913 were, my employer said, the best for over twenty years, and I can safely affirm that this year they were a distinct advance in crop, colour and size of berry and bunches, particularly Muscat of Alexandria variety, which we grow largely. A rod of Madresfield Court variety at the cooler end of the second house was the only exception, for it developed rather weakly growths and only one bunch of fruit. Otherwise the growth of 1914 is vastly superior to that of any previous season for many years, and I have not seen a single mealy bug despite very careful inspection. Two years ago the Grapes were white with this pest and had to be washed before they could be sent to the table. The winter dressing with tar, as described, is the only thing that has been used. Had any stray bugs been found this summer I should have used methylated spirits; but this specific has not been found necessary. *F. A. Edwordes, Upton Gardens, Alresford, Hampshire.*

A Disease of Apples.—I always read with interest the remarks by *Southern Grower* which appear in your columns. He seems to speak from practical experience. Being a regular reader of the *Chronicle* of many years' standing, I have no recollection of him dealing with a particular disease, which seems to be very prevalent again this season among Apples. I refer to the sunken spots, due to decay or shrivelling of the flesh under the skin, this taking place after the fruit is stored. I sent a specimen to a well-known mycologist, who could not determine the disease, but kept the fruit under observation (as the spots were developing), and promised he would let me know the result; but up to now I have heard nothing further. I will now ask *Southern Grower* if he is troubled with it, and what he suggests is the cause. I think myself that it will soon have to be dealt with, as it is greatly on the increase. The sorts most affected with me are, or have been, Ecklinville Seedling, Warner's King, Cox's Pomona, James Grieve and Rival. The disease is at present developing on Peasgood's Nonesuch, Gascoyne's Scarlet Seedling, Newton Wonder and Blenheim Pippin; but, so far, not on Cox's Orange Pippin. Fruits of Gascoyne's Scarlet Seedling, remarkable for size and colour and apparently sound, which I exhibited at the local society here three weeks ago, are to-day unrecognisable through the disease. On paring a diseased fruit of Blenheim Pippin I found that not only the flesh beneath the skin was affected, but that it proceeded very nearly to the core. An authority on fruit suggests to me that it is due to an insect which punctures the fruit and attacks periodically. He advocates spraying, but the difficulty will be to know when to do this. The fruit when attacked is practically valueless for either market or culinary purposes. *P. E. Cornish, Downs House Gardens, Yalding, Kent.*

[The disease referred to by Mr. Cornish is either Cylindrosporium Pomi, Fruit Spot of Apples, or Bitter Pit. The only reference to the former disease which I have seen is in a leaflet from the New Hampshire (U.S.A.) Experiment Station, in which it is described as a fungous disease, amenable to the same treatment as is scab. To an ordinary observer it is indistinguishable from Bitter Pit: but microscopical examination shows the presence of a fungus in Fruit Spot, whereas Bitter Pit is a purely physiological deformity. One or both of these diseases must be regarded as highly injurious to the interests of fruit-growers in this country. I have suffered more or less from either or both every season. Yet no English mycologist appears to have given any considerable attention to the subject. Massee, in his *Diseases of Cultivated Plants and Trees*, notices Bitter Pit, but not Fruit Spot of Apple. There is not any known remedy for the former, and its cause is only surmised. One writer attributes it to spraying with metallic stuffs, such as Bordeaux mixture, or arsenate of lead. Another thinks it is due to the bursting of cells caused by too great internal pressure. He refers to excessive transpiration during the day followed by a sudden checking at night, presumably indicating great flow of sap suddenly checked. It is very important that mycologists in this country should be able to inform growers to which malady any attack is due, because if it be Fruit Spot they can control it, while nothing that they can do, so far as is known at present, will be of any avail against Bitter Pit. By the way, the latter, it is said, does not always cause a bitter flavour. But this statement may imply that the authority who makes it mistakes a case of Fruit Spot for one of Bitter Pit. *A Southern Grower.*]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

November 17.—Present: Mr. E. A. Bowles, M.A., F.L.S., F.E.S. (in the chair), Dr. A. B. Rendle, Messrs. J. Fraser, A. Worsley, E. M. Holmes, W. C. Worsdell, J. T. Bennett-Poë, H. J. Chapman, W. Hales, W. Fawcett, J. Ramsbottom, and F. J. Chittenden (hon. sec.).

Alien plants.—Mr. J. Fraser showed dried specimens of Sisymbrium austriacum, a native of Central and S. Europe, closely allied to S. Iris, and of S. pannonicum (S. altissimum), which he had found growing on rubbish heaps. These plants do not, as a rule, maintain themselves for long in a wild state.

Maize cobs malformed.—Mr. W. C. Worsdell showed Maize cobs brought from Nyassaland by Mr. E. W. Davy, one of which had three or four narrow lateral cobs arising from the base and growing apparently in the axils of the lower bracts, the other was curiously fasciated at the apex. The latter was particularly curious, as the common view of the Maize cob is that it arises by fusion of several axes, and the specimen shown might have been expected to exhibit the fasciation throughout its whole length.

Araucaria imbricata attacked by fungus.—Mr. A. Worsley showed a fruit of the fungus Fomes applanatus from a tree of Araucaria imbricata growing in his garden. The tree had been damaged some years ago near the base, and the fungus had no doubt gained an entrance through the wound. It is a common parasite of Pines.

Dendrobium Toftii.—A Botanical Certificate was unanimously recommended to Dendrobium Toftii, a native of Queensland, and allied to D. taurinum, shown by Sir Jeremiah Colman, Bart., V.M.H., referred to this Committee from the Orchid Committee. Its flowers are borne at the apex of a leafy pseudo-bulb.

Calanthe × Brianchii.—This interesting hybrid between the evergreen Calanthe Tenorei and the deciduous C. × Bryan "Wm. Murray," the first raised between these two sections, was shown by Mr. C. J. Lucas, Warnham Court. Its habit was that of C. Tenorei, while the inflorescence was like that of its other parent. It followed the latter, also, in the size of its flowers, which were somewhat less bright than those of "Wm. Murray," but coloured and much larger than those of C. Tenorei. A Certificate of Appreciation was recommended to Mr. Lucas for the work done in making this interesting cross, and a Botanical Certificate to the plant.

Seedless fruits of Aegle sepiaria.—Mr. E. A. Bowles showed ripe fruits of Aegle sepiaria which had ripened outdoors, but which, though of normal size, contained no seeds. In ordinary seasons fewer fruits are produced, and they usually fail to ripen outside, but contain good seed, which readily ripens indoors.

BOURNEMOUTH HORTICULTURAL.

DEPUTATION FROM THE ROYAL HORTICULTURAL SOCIETY.

November 10, 11.—The autumn exhibition of the above society, held on the 10th and 11th inst. in the Westover Rink, was a splendid success. The president of the society is Sir Daniel Morris, V.M.H., and the vice-presidents include the Mayor of Bournemouth, Lady Theodora Guest, and the Earl of Malmesbury. The show was a notable one in the history of the society, for it was visited by a deputation of the R.H.S., consisting of Sir Harry Veitch, who officiated at the opening ceremony, the Rev. W. Wilks, M.A., and Mr. S. T. Wright, and these gentlemen awarded 14 R.H.S. Medals and three Silver Cups. The profits of the exhibition were given to the Mayor's War Relief Fund.

Sir Daniel Morris, who presided at the opening ceremony, said that for a long time his committee was not sure that it would be possible to hold a show. One reason why they determined to carry on the show in spite of the war was that they received a letter from the Royal Horticultural Society asking them to do all they possibly could as in other years in order that there should be no discouragement in the maintenance of gardens and for the employment of those connected with them. It was therefore on patriotic grounds that they decided to hold the show, and he thought they were fully justified by the results.

Sir Harry Veitch congratulated the Bournemouth society on the exhibits, and stated that although the fruit exhibited was not very plentiful some of it was good enough for any exhibition in the country. The members of the deputation were very glad to have been able to award 17 prizes, comprising three Silver Cups and 14 Medals.

The Rev. W. Wilks observed that the Royal Horticultural Society took a great interest in the efforts of the practical working gardener. The Chrysanthemums at the show were marvellous from a cultural point of view, and from the point of view of masses of colour they were wonderful, but as artistic flowering plants they were hideous. Certainly they did the greatest pride and credit to those who had raised them, because each one of those flowers represented an enormous amount of trouble and care, from February to the present time. If they wanted real artistic flowers they must offer prizes for plants of Chrysanthemums shown in pots and not disbudded, and then they would get them. It was impossible for ladies to wear these huge blooms on their dresses. If the committee next year offered prizes as he suggested they would arrive at a style of flower that would be suitable for a lady's dress or a lady's drawing-room.

The Exhibits.

The centre of the hall was filled with several long tables of Chrysanthemum blooms, whilst table decorations were also accommodated in the centre. Round the sides of the hall were the trade exhibits, including miscellaneous collections of plants and flowers shown by Messrs. G. Watts and Sons, of the Palace Nurseries, Bournemouth, which occupied the whole of one end of the hall. For this display they were awarded a Silver Cup by the Royal Horticultural Society. R.H.S. Silver Cups were also awarded to Captain Dalgety, Lockerley Hall, Romsey, for a group of Japanese Incurved Chrysanthemums, and Mr. E. G. Mocatta, of Woburn Place, Addlestone, for two collections of Japanese Chrysanthemums. In the Open Classes for a group of miscellaneous plants and cut flowers there were only two entries, and Mr. J. Stevenson, Wimborne, obtained the 1st prize with an imposing display of Chrysanthemums, admirably arranged. The Park Nurseries, Ltd., Bournemouth (Mr. F. Welch), were placed 2nd with a praiseworthy group of Carnations, white and red Asters, and foliage and plants. Captain Dalgety, Sir Randolf Baker, M.P., Mr. Hugh Andrews, Toddington Manor, Winchcombe, Mr. E. G. Mocatta, Major Chichester, Embley Park, Romsey, the Rev. C. H. Burrows, Bournemouth, Messrs. G. Watts and Sons, Ltd., Lord Alington, Mr. J. J. Kettle, Corfe Mullen, Mr. J. Stevenson, Wimborne, and Mr. J. H. Cape, Ferndown, were prominent winners in the open classes. Mr. E. G. Mocatta, with his exhibit of 9 vases of Japanese Chrysanthemums, won the Silver Cup presented by Alderman J. E. Beale, J.P.; in the local division Mrs. Ormond, Astney Firs, Bournemouth, was awarded the Silver Cup presented by Messrs. Goodman and Son for a group of Japanese and single flowered Chrysanthemums, and Major Tinker, Chewton Glen, Highcliffe, was successful in winning Mrs. Caroline Telfer's Cup for vases of Japanese Chrysanthemums. For a tasteful group of Carnations Sir Randolf Baker was awarded the Cup given by the late Mrs. Sansinena. A feature of the show was the gifts of various fruits and flowers to be sold on behalf of the Mayor's War Relief Fund and the Belgian Relief Fund.

AWARDS.

Royal Horticultural Society's Awards.

Silver Cups.—E. G. Mocatta, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), for 24 cut blooms and 9 vases of Japanese Chrysanthemums; Captain Dalgety, Lockerley Hall, Romsey (gr. Mr. W. Baxter), for 12 Japanese Incurved cut blooms; and Messrs. G. Watts and Sons, Bournemouth, for a group of miscellaneous plants.

Silver-gilt Flora Medals.—Mr. J. Stevenson, Wimborne, for a group of miscellaneous plants and cut flowers; Messrs. J. Cypher and Sons, Cheltenham, for a group of Orchids; and Messrs. Stuart Low and Co., Bush Hill Park, Middlesex, for Carnations and Orchids.

Silver-gilt Banksian Medals.—The Park Nurseries, Ltd., Bournemouth, for a group of miscellaneous plants and cut flowers; Sir Randolf Baker, Bart., Ranston, Blandford (gr. Mr. A. E. Usher), for cut blooms; and Messrs. R. Veitch and Son, Exeter, for fruit and flowers.

Silver Flora Medals.—Mr. Hugh Andrews, Toddington Manor, Winchester (gr. Mr. J. H. Tooley), for 9 vases of Japanese Chrysanthemums; Major Wyndham Pain, Bransgore (gr. Mr. P. Kitcher), for 12 cut blooms of Japanese Chrysanthemums; and Mr. M. Pritchard, Christchurch, for a collection of Saxifragas.

Silver Knightian Medals. — Mr. Hugh Andrews, for 3 bunches of Grapes; and Mr. G. H. Copp, of Boscombe Grove Road, for a collection of vegetables.

Silver Banksian Medals.—Major Chichester, Embley Park, Romsey (gr. Mr. W. Hall), for 2 bunches of white Grapes; Mr. J. H. Cape, of Ferndown, for a collection of Apples; and Sir Randolf Baker, Bart. (gr. Mr. A. E. Usher), for 4 dishes of Apples.

National Chrysanthemum Society's Awards.

Certificates of Merit.—Major Tinker, Chewton Glen, Highcliffe (gr. Mr. W. Weaver), for 2 vases of Japanese Chrysanthemums; and Mr. J. Stevenson, Wimborne, for a group of miscellaneous plants.

HORTICULTURAL CLUB.

November 17.—On the 17th inst. the members of the Horticultural Club assembled in the clubroom, Hotel Windsor, Westminster, on the occasion of a house dinner and lecture. Sir Harry J. Veitch presided.

When the toast of "The King" had been honoured the hon. sec., Mr. Hooper Pearson, referred to the fact that news had just reached him that a member of the club, Mr. H. G. F. MacDonald, was present and took part in the famous charge of the London Scottish. He proposed, therefore, that the club send their congratulations and best wishes to Colour-Sergeant MacDonald. Another member of the club, Mr. George Monro, was represented by his son, Captain E. G. Monro, on the same historic occasion. The resolution was adopted. Mr. Pearson also proposed the toast of the Belgian horticulturists at present seeking refuge on these shores, coupling the toast with the name of M. Hector Van Orshoven, a representative of the Belgian Department of Horticulture. Mr. Rudolph Barr seconded, and M. Van Orshoven briefly returned thanks.

The subject of the lecture was "Some Results of Orchid Hybridisation," and the lecturer was Mr. H. J. Chapman, Oakwood Gardens, Wylam-on-Tyne, who illustrated his remarks with a large number of hand-coloured and autochrome lantern slides. He referred to the extraordinary results Orchid hybridists had obtained, and the increased development secured in recent years from the crossing of allied genera, a development that was evident in the greater variety of Orchids now obtainable in flower during the winter season. He classified the different families of hybrids, showing slides on which were finely-coloured photographs of the parents and some of the hybrids resulting from cross fertilisation. Phaius, Cattleyas, Odontoglossums, Cypripediums and bigeneric hybrids of Cattleyas and allied genera were taken in their turn.

In speaking of the albino types of Cattleya and other genera Mr. Chapman stated that his experience seemed to indicate that each so-called albino was capable of reproducing its characteristics when self-fertilised, and there were several cases on record where two albinos crossed with each other had produced white characters; for instance, Cattleya intermedia alba and C. Mossiae alba when crossed with each other produced the well-known Cattleya Dusseldorfei var. Undine. In the case of Cypripedium insigne Sanderae, which had been raised in several instances true to its albino characteristics, in all other cases where it had been crossed with so-called albinos of other species it invariably reverted to the normal characterstics of the coloured type.

An interesting slide was exhibited showing the results of crossing Cypripedium insigne Sanderae with C. Leeanum, and then inbreeding, using C. i. Sanderae as the pollen parent with C. Actaeus and C. San-actaeus as the female parent, the latter cross producing C. San-acderae, with the pure albino characters of the original albino sport. Thus the lecturer showed that the same law of fixing a sport in the animal world could be applied with certainty to the vegetable kingdom.

Proceeding to speak of the wonderful results obtained in respect to the development of spotting in Odontoglossums, Mr. Chapman showed a series of slides representing some of the primary and secondary hybrids. In some cases he showed that seeds from the same pod as, for instance, in the case of Odontoglossum percultum, produced every intermediate form, from white to solid purple.

He next referred to Calanthes, and stated that the genus Calanthe showed some of the highest results hybridisation has achieved, and expressed the opinion that if similar progress is to be obtained in other families of plants in the future, then there will be witnessed a wonderful distribution of colour such as can scarcely be imagined. Commencing with C. vestita, a white flower with red disc, and C. rosea, a small, rose-tinted species, a hybrid was obtained which was named Calanthe Veitchii. Succeeding slides represented different generations which intervened between C. Veitchii and the advent of the deep-lobed varieties, such as C. Chapmanii and C. Angela. "The colour," said the lecturer, "had been turned completely inside out; the white occurring in the central disc and the deep red on the sepals and petals and outer lobes of the lip."

Turning to the bigeneric hybrids the lecturer said that these were now so numerous as to form a subject that could only be treated upon thoroughly if an evening were reserved for them. At the same time, slides were shown which illustrated the results of some of the more important crosses, chiefly Odontiodas. In the case of secondary crosses, some very remarkable flowers were illustrated.

In opening the discussion which followed the exhibition of the slides, Mr. R. A. Rolfe reviewed some of the subjects upon which the lecturer had touched. With regard to the great preponderance of blotched forms found among hybrid Odontoglossums, he thought it was a case of reversion. Taking the genus as a whole, the yellow and blotched forms were far more numerous than the white, which latter might be regarded as the latest stage of development, and reversion was a common feature among hybrids. The sections of the ovary of the Old and New World Cypripedes thrown upon the screen were interesting, and showed a fundamental difference between the two groups. And there was another difference, which Dr. Lindley always anticipated would be found, but failed himself to detect, namely, that in the former the sepals were imbricate but in the latter valvate. The difference was well seen by cutting a bud across. The colour slides were excellent and of the highest value as records. He greatly preferred photographic reproductions to hand-painted drawings, and looked forward to the time when coloured photographs would be reproduced with the same accuracy in colour as was already obtained in form.

Mr. F. K. Sander emphasised the enormous commercial value that now pertained to Orchid hybrids, impressing his hearers with the fact that in any collection of exhibited Orchids the proportion of hybrids to species was altogether more favourable to hybrids than formerly. Not only had Orchid hybridisation given to Orchid culture a great stimulus over all the world, but Orchid-growers might claim that the results had stimulated the efforts of hybridists in every other class of plants.

Mr. W. Watson made some remarks upon the history of Orchid hybridisation, and referred to the fact that it was due to an amateur, Dr. Harris, a medical man, that John Dominy was first led to attempt the cross-fertilisation of Orchids—that attempt being rewarded, as everyone now knows, in the raising of Calanthe Dominyi, which was first recorded in the *Gardeners' Chronicle* in 1858. Mr. Watson added that the hand-coloured slides exhibited that evening were the best he had seen.

Mr. A. Worsley pointed out that the albinos mentioned by the lecturer were not strictly albinos. They were only albinos in the sense that certain colours in other flowers were undeveloped in them. But they were not pure white to the exclusion of green, brown and other colours. Consequently, it was not surprising that occasionally the colour development was considerable. At the same time, certain crosses undoubtedly possessed the quality of fixity.

Sir Harry Veitch, in proposing a vote of thanks to the lecturer, referred to several episodes in the early history of Orchid hybridisation, and said that he was perfectly sure that the members of the club would be exceedingly grateful to Mr. Chapman if he would fulfil his promise and come to the club on some forthcoming occasion and speak to them on the subject of bigeneric hybrids.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

November 5.—*Committee present:* Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. Bamber, J. Cypher, J. Evans, A. Hanmer, J. Howes, A. J. Keeling, J. Lupton, D. McLeod, W. J. Morgan, C. Parker, W. Shackleton, H. Thorp, Z. A. Ward, G. Weatherby, and H. Arthur (secretary).

AWARDS.

First-Class Certificate.

Cattleya Peetersii alba West Point var. Sepals and petals pure white, lip brilliantly-coloured, from S. Gratrix, Esq.

Awards of Merit.

Odontoglossum Noel, O. Jeanette var. Rubellum, Cattleya Sylvia var. atro-rubens, and Cypripedium Idina (Harefield Hall × Countess of Carnarvon), all exhibited by Wm. Thompson, Esq.

Brasso-Cattleya Sulphurea (C. Gaskelliana alba × B.-C. Mrs. Leeman), shown by R. Ashworth, Esq.

Cattleya Armstrongii Cringlewood var., shown by Z. A. Ward, Esq.

C. Fabia "Fire King," from Mrs. R. Le Doux.

Cypripedium Draco var. Cyclops (C. Euryades New Hall Hey × C. Harefield Hall), exhibited by S. Gratrix, Esq.

Awards of Appreciation.

Cattleya Fabia alba, from Wm. Thompson, Esq.

Cattleya labiata "Rosy Morn," from Col. J. Rutherford, M.P.

Odontonia McNabiana (Od. Edwardii × Miltonia vexillaria Bleueana), from Messrs. Sander and Sons.

Cypripedium Gen. Joffre (Leeanum Lavertonianum × Ceres), from Messrs. Keeling and Sons.

First-Class Botanical Certificate

Coelogyne Brunnea, exhibited by Messrs. Sander and Sons.

SCOTTISH HORTICULTURAL.

November 12, 13, 14.—The 29th annual Chrysanthemum exhibition and winter flower show of this association was held in the Waverley Market, Edinburgh, on these dates. The building was fairly well filled, and in the case of Chrysanthemums the quality was very good indeed, while Scotch-grown Apples and Pears have scarcely ever been seen at this show in finer condition. When some time ago the council decided to proceed with the show it was agreed that a sale of plants, flowers and fruit should be held, and that the profit should be given to the British Red Cross Society and Belgian Relief Fund, and it is gratifying to know that these funds will benefit thereby to the extent of something over £250.

Cut Flowers.

The City of Edinburgh Queen Victoria Memorial prizes, presented by the Lord Provost, magistrates and Town Council, were offered for a display of single and double Chrysanthemums on a table 12 feet by 8 feet, decorated with Ferns, foliage plants, or cut flowers. There were four competitors, and the first prize, the City of Edinburgh Cup and £12 was awarded to Mrs. Boase, Binrock, Dundee (gr. Mr. Jas. Beats); 2nd, the Right Hon. R. C. Munro Ferguson, of Raith, Kirkcaldy (gr. Mr. D. McLean); 3rd, A. Sinclair Henderson, Esq., Seathwood, Dundee (gr. Mr Geo. Scott); 4th, the Right Hon. Lord Elphinstone, Carberry Tower, Musselburgh (gr. Mr. D Kidd).

In the Scottish Challenge Cup Class, which is the leading class for big blooms, and which calls for 10 vases of Japanese Chrysanthemums in 10 varieties, three blooms in a vase, there were seven entrants, and the Cup (to be held by the winner for a year) was won by John Graeme Thomson, Esq., Norwood, Alloa (gr. Mr. Jas. Small). Sir Jas. Sivewright, Tulliallan Castle, Kincardine-on-Forth (gr. Mr. Geo. Stewart), was awarded the 2nd prize; and W. T. McLellan, Esq., Auchenault, Helensburgh (gr. Mr. Hugh MacSkimming), the 3rd prize. The varieties shown by Mr. Thomson and the points awarded to them were as follow:—Thomas Lunt, 9½; Mrs. A. E. Roope, 11; Elsie Davis, 8½; Queen Mary, 10½; Mrs. G. Drabble, 8½; Francis Rowe, 8½; Bob Pulling, 10½; Wm. Turner, 10; Fred. Chandler, 9; Fred. Green, 9. As the maximum number of points for each variety was 12, it will be seen that Mr. Thomson won 95 points out of 120. Sir Jas. Sivewright was awarded 86 points, W. T. McLellan, Esq., 83½ points, and the Hon. Mrs. Askew Robertson 81 points.

W. H. Dorie, Esq., Dollarbeg, Dollar (gr. Mr. John Waldie), was awarded the 1st prize in the class for 6 vases of Japanese Chrysanthemums, 6 varieties, 3 blooms in each vase, with 54 points; Michael Nairn, Esq., Dysart House, Fife (gr. Mr. Angus Robb), being placed 2nd with 53½ points. In the class for 12 blooms of Japanese Chrysanthemums, in 12 varieties, shown on boards, Mr. J. Graeme Thomson was awarded the 1st prize; 2nd, the Rev. Canon Cooper Marsden, Borstaldene, Bickley, Kent (gr. Mr. Wm. Rigby). Sir Jas. Sivewright excelled in the class for 2 vases of Japanese blooms, 1 variety, 3 blooms in each vase; J. Graeme Thomson, Esq., for 4 vases of Japanese blooms in 12 varieties, 3 blooms in each vase; and David Cross, Esq., Ingliston, Bishopton (gr. Mr Francis Templeman), for 4 vases of Japanese blooms in 4 varieties, 3 blooms in each vase, and for 2 vases Japanese, 6 varieties, 3 blooms in each vase.

J. Graeme Thomson, Esq., was awarded the Silver Medal for the best Chrysanthemum bloom in the show for a fine example of Mrs. A. E. Roope.

In the classes for decorative Chrysanthemums the Right Hon. A. J. Balfour, M.P., Whittingehame, East Lothian (gr. Mr. Geo. Anderson), excelled for 3 vases, in 3 varieties; and Colonel More-Nisbett, The Drum, Gilmerton, Midlothian (gr. Mr. R. Whannell), for 1 vase of disbudded blooms. Mr. Loo Thomson, Ailsa Craig, Formby, excelled for 6 vases of singles, in 6 varieties, and not more than 12 disbudded blooms in each vase; and Sir Henry Dundas, Bart., Polton House, Midlothian (gr. Mr. A. W. Elliot), for 3 vases of singles, in 3 varieties, not more than 12 sprays in each vase, in the open class; while Mrs. N. Hamilton Ogilvy, Winton Castle, East Lothian (gr. Mr. J. McFadyen), excelled for 3 vases singles in the class confined to gardeners and amateurs.

Messrs. Todd and Co., Edinburgh, excelled for 6 vases of Chrysanthemums, in 6 varieties, 3 double and 3 single, as grown for market.

Sir John Dewar, Bart., Dupplin Castle, Perthshire (gr. Mr. W. F. Game), won Messrs. Young and Co.'s Challenge Cup, and the 1st prize for 1 vase perpetual-flowering Carnations in at least 6 varieties.

The Silver Medal offered by the Association for the best new Chrysanthemum not in commerce was awarded to the Rev. Canon Cooper Marsden, Borstaldene, Kent (gr. Mr. W. Rigby), for the variety W. Rigby.

Plants.

James Chisholm, Esq., Boroughfield, Edinburgh (gr. Mr. Wm. Michie), excelled in the classes for 6 Chrysanthemums, 4 Japanese Chrysanthemums, 2 Chrysanthemums, and 1 single Chrysanthemum; and A. Sinclair Henderson, Esq., Seathwood, Dundee (gr. Mr. Geo. Scott), excelled for 6 Chrysanthemums in 7-inch pots. Mrs. Alex. Rose, Richmond House, Dowanhill, Glasgow (gr. Mr. Jas. Templeton), showed the best 6 Palms, 3 specimen Palms, and 2 specimen Palms; and R. Jardine Paterson, Esq., Balgray, Lockerbie (gr. Mr. Alex. Cameron), was placed 1st for 1 specimen Palm with a fine Phoenix Roebelinii.

Wm. Baird, Esq., Elie House, Fife (gr. Mr. A. A. Law), excelled for 4 Dracaenas and for 4 decorative foliage plants; A. Sinclair Henderson, Esq., for 6 Primula sinensis: Mrs. Hog, Gogar Burn, Midlothian (gr. Mr. Wm. Brow), for 6 Primula obconica; the Right Hon. A. J. Balfour, for 6 table plants; Miss Balfour-Melville, Pilrig House, Edinburgh (gr. Mr. Wm. Robertson), for 6 dwarf Ferns; Jas. A. Hood, Esq., Midfield, Lasswade (gr. Mr. Wm. Goldstraw), for 6 table Ferns; Lord Elphinstone, for 6 Salvia splendens; the Right Hon. Lord Stratheden and Campbell, Hartrigge House, Jedburgh (gr. Mr. A. Williams), for 6 pots of Roman Hyacinths, and for 4 specimens of Begonia Gloire de Lorraine; Col. More-Nisbett, for 3 pans of Lily-of-the-Valley; R. M. Pilkington, Esq., St. Fort, Fife (gr. Mr. J. J. Staward), for 6 Cyclamen; A. Drybrough, Esq., Gogar Park, Midlothian (gr. Mr. A. Findlay), for 6 specimen Ferns; J. Stewart Clark, Esq., Dundas, for 4 winter-flowering Begonias; and C. W. Cowan, Esq., Dalhousie Castle, Midlothian (gr. Mr. W. G. Pirie), for 1 Cypripedium; R. Hindle, Esq., 17, Blacket Place, Edinburgh (gr. Mr. Sidney Houlden), was awarded a Gold Medal for a non-competitive exhibit of Orchids, staged on a table 10 feet by 5 feet.

Fruit.

The Right Hon. Lord Elphinstone, Carberry Tower, Musselburgh (gr. Mr. D. Kidd), was the only entrant for the collection of 8 dishes of fruit, and he was awarded the 1st prize of £3 3s.

Charles W. Forbes, Esq., of Callendar, Falkirk (gr. Mr. J. Middleton), excelled for 4 bunches of Grapes, distinct varieties, and for 2 bunches of Lady Downes; the Most Hon. the Marquis of Tweeddale, Yester, Haddington (gr. Mr. Wm. Hunter), for 2 bunches of Grapes, 1 black and 1 white; Sir David Kinloch, Bart., Gilmerton, East Lothian (gr. Mr. A. Gauld), for 2 bunches of Muscat of Alexandria; Chas. H. Shaw, Esq., Edenhall, Langwathby (gr. Mr. Wm. Scott), for 2 bunches of Black Alicante, 1 bunch of Appley Towers, and 1 bunch of Lady Hutt; Mrs. N. Hamilton Ogilvy, Winton Castle, for 2 bunches of Gros Colman; and Lord Elphinstone, for 1 bunch of any other variety

For 12 dishes of Apples, 6 culinary and 6 dessert varieties, and 6 dishes of Pears, in not fewer than 4 varieties, grown in Scotland, C. L Gordon, Esq., of Threave, Castle Douglas (gr. Mr. J. Duff), was awarded the 1st prize and the Malcolm Dunn Memorial Medal Mr. Gordon was also placed 1st for 18 dishes of Apples, 12 culinary and 6 dessert varieties. Mr. R. G. Sinclair, Congalton, East Lothian, excelled for 6 varieties of Pears grown in Scotland, and also for 3 baskets of dessert Apples and 3 baskets of culinary Apples, in classes for market gardeners. The Rev. G. H. Davenport, Foxley Hall, Hereford (gr. Mr. Robert Currie), excelled for 4 varieties of Pears, and for 8 varieties of culinary Apples; and Mr. Jas. Chisholm, Meikleour, excelled for 6 varieties of dessert Apples.

Vegetables.

The Right Hon. the Earl of Home, Bothwell Castle, Lanarkshire (gr. Mr. W. P. Bell), and A. A. Allen, Esq., M. P., Tulliebelton, Perthshire (gr. Mr. Wm. Harper), were awarded the 1st and 2nd prizes respectively for a collection; Wm. Baird, Esq., Elie, excelled for Tomatos: Mr. Jas. Fleming, Galashiels, for Leeks; W. H. Dobie, Esq., Dollarbeg, for Cucumbers, Brussels Sprouts, Celery and Beetroot; Mr. David Lowe, Musselburgh, for Cauliflowers; Mrs. Hog, Gogar Burn, for Cabbages; Mr. J. W. Scarlett, Inveresk, for Savoys; G. D. Mackay, Esq., Inveralmond, Midlothian (gr. Mr. J. W. Sword), for curled Greens and Parsley: Stephen Mitchell, Esq., Boquhan, Kippen (gr. Mr. Chas. Shaw), for Parsnips, Carrots and Turnips; Mrs. Baird Hay, Rosemount, Ayr (gr. Mr. P. Melville), for Onions: Mrs. N. Hamilton-Ogilvy, Winton Castle, for Jerusalem Artichokes; and Miss Burton, Polton, for Potatos.

Non-Competitive Exhibits.

Gold Medals were awarded to Messrs. W. Wells and Co., Merstham, Surrey, for Chrysanthemums; Messrs. Storrie and Storrie, Carse of Gowrie Nurseries, Glencarse, for fruit trees, etc.; and Messrs. Dobbie and Co., Edinburgh, for Potatos. Messrs. R. B. Laird, and Messrs. Dicksons and Sons, Ltd., Edinburgh, received Silver-gilt Medals for Coniferae. and Messrs. John Forbes (Hawick), Ltd., and Messrs. Laing and Mather, Kelso, were awarded Silver and Bronze Medals respectively.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

LA BELGIQUE SOUS LES ALLEMANDS.

UNE LETTRE DU REDACTEUR EN CHEF D'UN JOURNAL HORTICOLE BELGE.

(*Suite de la p.* 344.)

Le malheureux sort de Louvain est connu de tous vos compatriotes. J'avais, aux premières rumeurs de la destruction de la ville, l'impression que des habitants devaient avoir commis des excès, car je ne pouvais croire que des gens se disant civilisés pussent commettre des horreurs pareilles. Plus tard, j'ai pu entrer dans la ville et j'ai parlé à un grand nombre de Louvanistes. (Je dois dire que j'ai de nombreuses connaissances à Louvain, car ma famille en est originaire et moi même j'y ai fait mes études.) On a été unanime à me dire qu'à la suite d'une confusion, il y eut un combat entre Allemands. Il a fallu cacher la méprise et la population a été la victime expiatoire.

J'avais entendu des fuyards faire le récit des événements de Louvain ; je croyais à des exagérations bien naturelles chez des gens pris de panique ; mais lorsque j'eus vu ce qui restait des rues, de la station, de Tirlemont, de Diest, de la Grand' Place et de l'église, de la rue de Namur et des Halles universitaires, du Vieux marché, de la rue de Bruxelles, de la rue aux Tripes et de tant d'autres ; lorsque j'eus recherché en vain toutes ces maisons familières où, aux heures de repos, nous allions faire la partie de cartes tout en dégustant un Jack-op, lorsque de tout cela je n'eus trouvé qu'un tas de débris au milieu desquels on avait peine à se guider, j'ai dû avouer que les récits ne m'avaient donné qu'une idée bien imparfaite des ravages accomplis.

On ne peut prétendre qu'à Louvain la destruction est l'œuvre de soldats isolés. Pendant que le feu faisait rage, des militaires sont allés prévenir les habitants qu'ils avaient deux heures pour s'éloigner, la ville devant être bombardée ; à l'hôpital ils ont accordé le même délai pour évacuer les malades ! L'incendie a commencé le mardi soir ; des soldats de la Landwehr que j'ai vus à Tervueren le dimanche suivant, m'ont déclaré être arrivés la veille de Louvain où le génie allemand allait faire sauter ce qui restait de la ville (cette menace n'a pas été exécutée).

Tout le monde à Louvain commente la façon dont le faubourg de Héverlé a été épargné, alors qu'à Blauwput, Kessel Loo, Berthem, etc., les incendiaires ont été à l'œuvre. On prétend que les Allemands avaient reçu des ordres formels en ce qui concerne Héverlé, parce qu'un officier de la garde impériale y possède de grandes propriétés. Quoi qu'il en soit, les habitants de Terbanck, dépendance de Héverlé mais située à l'autre extrémité de Louvain, se sont empressés d'inscrire sur leurs portes les mots : Commune de Héverlé (Terbanck).

Au nombre des victimes de Louvain on compte un certain nombre de maraîchers, soit que leurs maisons aient été incendiées, soit qu'eux mêmes aient été déportés en Allemagne. J'ignore s'il y en a parmi les nombreuses personnes fusillées.

* * *

Que vous dire de la situation horticole en Belgique ? Les horticulteurs de Gand ont été quelque peu privilégiés, l'occupation allemande n'y étant définitive que depuis la chute d'Anvers ; une partie de leur commerce d'exportation a pu se faire, bien que les transactions aient eu lieu à des prix bien bas. Aux environs de Bruxelles la situation est lamentable si l'on excepte les produits maraîchers pour lesquels la concurrence de Malines a été longtemps supprimée. Toutes les fleurs doivent se vendre dans la capitale et les prix sont tels que beaucoup de fleuristes ne se donnent pas la peine d'envoyer leurs produits au marché. Quant aux Raisins, ils réalisent à peine 35 à 40 centimes le kilo (1½d. à 2d. la livre). La ville en est inondée ; à certain moment, le beurre étant rare, beaucoup de gens mangèrent du pain sec avec du Raisin ! La récolte d'hiver a été supprimée en grande partie, le charbon faisant défaut, et les rares producteurs qui avaient pu faire leurs provisions aimant mieux le vendre que de l'employer à faire du Raisin dont ils n'obtiendraient peut-être pas 3d. ou 4d. la livre. *Hector Van Orshoven, agent technique à l'Office Horticole, Bruxelles, Rédacteur-en-Chef du* Tuinbode (*Belgian Horticultural Journal*).

LES RAVAGES DANS LE PAYS DE MALINES.

DERNIERES NOUVELLES.

Nous devons à l'obligeance de M. De Meyer, conseiller d'horticulture de l'Etat belge, des renseignements très intéressants sur des exploitations horticoles qui ont eu à souffrir au cours du bombardement d'Anvers. A Puers, dans l'établissement De Bondt, qui comptait onze grandes serres et 20,000 châssis " éénruiters "* le tout consacré à la production des Choux-fleurs, Tomates et Concombres, 15,000 châssis sont détruits de même qu'une partie des serres. La récolte de Tomates, estimée à 80,000 kg., n'a pu être vendue et s'est décomposée sur place. L'établissement Meersman, dans la même localité, a été très endommagé, 25,000 kg. de Tomates y ont été perdus. A Duffel, les serres de M. Verhaegen sont toutes détruites. Les milliers de plants de Fraisiers nécessaires pour le forçage de la saison prochaine sont absolument inutilisables. Dix serres sont également détruites chez M. Vanderlinden, un autre spécialiste dans le forçage du Fraisier, de la Tomate, du Chrysanthème et du Rosier. Les serres de l'importante firme De Laet à Contich, réputée pour ses riches collections de plantes grasses, n'ont pas été atteintes par les obus, mais des dégâts considérables ont été occasionnés aux plantes. Au Jardin Botanique de Malines, les plantes ont pu être rentrées dans les serres, mais, faute de verre, les brèches faites dans les toitures ne peuvent être réparées. De plus il est impossible d'obtenir du charbon pour le chauffage. L'Office horticole belge y avait annexé un jardin démonstratif pour la culture maraîchère. Une bombe est tombée au milieu de ce jardin brisant les carreaux des serres et les châssis, tout en faisant un trou profond de 3 mètres et large de 7.

Witloof ou Chicorée de Bruxelles.—De même que pour le Raisin, la guerre avait rendu impossible l'exportation de Witloof belge. La semaine dernière un premier arrivage a été enregistré à Covent Garden. Il avait transité par la Hollande. Les prix ont oscillé autour de 5d. la livre.

Aux Halles de Paris.—Le froid qui sévit commence à faire sentir son effet sur les fruits et légumes. Dans l'ensemble les cours se dessinent vers la hausse. C'est la région parisienne qui continue à fournir l'approvisionnement nécessaire. Le trafic avec le Midi est devenu régulier pour les Raisins, qui se vendent encore assez bas, et pour les Oranges d'Espagne qui ont fait leur apparition dans les carreaux. Les fruits de choix subissent une forte baisse. Les Poires qui valaient 150 francs les 100 kilos se vendent 70 et même 60 francs

M. du Trieu de Terdonck.—Nous apprenons que l'horticulteur belge bien connu, M. du Trieu de Terdonck, un des leaders du mouvement horticole dans la région de Malines, est en Angleterre. Adresse, Swan Hotel, Petworth, Sussex.

Les Jacinthes.—Des horticulteurs-fleuristes du Continent se plaignaient de la concurrence qui leur était faite par des fournisseurs de bulbes hollandais qui amenaient au marché les fleurs produites dans leurs pépinières. Plusieurs grandes firmes de Haarlem, Lisse, etc., refusaient déjà de s'associer à ce trafic, préjudiciable aux intérêts de leurs acheteurs de bulbes. Une convention vient d'être conclue entre des associations de producteurs hollandais qui s'engagent à ne pas mettre en vente, après le 1 mars des années 1915 et 1916, les Jacinthes coupées dans leurs champs de bulbes. Une longue liste d'adhérents a déjà été publiée. Les promoteurs du mouvement se proposent également de publier la liste des horticulteurs qui refuseront de s'associer à ce mouvement.

The Perpetual-flowering Carnation Society organise une grande exposition d'Oeillets le mercredi 2 décembre, au Royal Horticultural Hall. La recette est destinée au Belgian Relief Fund et la plupart des fleurs exposées seront mises en vente au profit de la même oeuvre. Les horticulteurs belges et leurs amis sont admis gratuitement.

Les Fruits et Legumes a Bruxelles.—Suivant le *Daily Mail* le prix des produits horticoles à Bruxelles a encore baissé. Le Raisin s'y vendrait à 1d. la livre, les Pommes et Poires moins encore.

Culture intensive.—L'Angleterre a suivi avec intérêt l'évolution de l'agriculture belge vers la culture maraichère et divers économistes anglais ont préconisé l'introduction des procédés belges. En ce moment où tant de maraîchers se sont réfugiés en Angleterre, l'occasion leur semble propice et nous apprenons par la voie des journaux qu'entre autres dans la péninsule de Lleyn (Carnarvonshire) une colonie agricole pour réfugiés belges vient d'être créée. On croit que la démonstration de leurs méthodes sera des plus profitable aux agriculteurs du Pays de Galles.

Worshipful Company of Gardeners.—De nombreux horticulteurs belges se rappellent la tournée faite l'année dernière en Belgique par la Worshipful Company of Gardeners de Londres. Cette société fut reçue en audience par Sa Majesté le Roi Albert, et des réceptions furent organisées en son honneur par les administrations communales de Bruges, Malines, Tournai, de même que par la Société Royale d'Agriculture et de Botanique, de Gand, et la Société Royale Linnéenne, de Bruxelles. La souscription ouverte par le *Daily Telegraph*, et qui atteint à l'heure actuelle près de deux millions de francs destinés à être remis à S.M. le roi, a fourni à la Worshipful Company of Gardeners l'occasion de montrer sa reconnaissance à la Belgique. C'est elle en effet qui a acquis pour £50 (1,270 francs) le dessin du *Punch*, vendu au profit de la souscription. Elle y a, de plus, contribué pour une somme de £52 10s. (1,333 francs 50). Les Belges apprendront avec plaisir que le secrétaire de la "Company" est toujours M. E. A. Ebblewhite, qui a été honoré de la décoration spéciale de 1re classe de Belgique.

---

* On désigne sous le nom de "éénruiter" un châssis à verre unique.

MARKETS.

COVENT GARDEN, November 25.

Cut Flowers, &c.: Average Wholesale Prices

	s.d. s.d.
Arums (Richardias) per doz.	3 6- 4 0
Bouvardia, pink, per doz. bun.	5 0- 6 0
— white	5 0- 6 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties	1 3- 1 9
— smaller, per doz. bunches	10 0 12 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz.	1 9- 2 0
— yellow per doz.	1 9- 2 0
— pink ,,	1 9 2 0
— bronze ,,	1 6 2 0
— white, medium per doz.	1 3- 1 0
— coloured, per doz.	1 0- 1 3
— Spray, white, per doz. bun.	4 6- 6 0
— — yellow, per doz. bun.	4 0- 5 0
— — pink, per doz. bun.	4 0- 5 0
— — bronze, per doz. bun.	4 0- 6 0
— singles, disbudded, per doz. blooms	0 9- 1 3
— — sprays, per doz. bunches	4 0- 8 0
Eucharis, per doz.	2 0- 2 6
Gardenias, per box of 15 and 18 blooms	2 6- 3 6
Lapageria alba, per doz. blooms	— —
Lilium auratum, per bunch	2 6- 3 0
— longiflorum, per doz., long	2 6- 3 0
— — short	2 6- 3 0
— lancifolium album, long	1 9- 2 0
— — — short	1 3- 2 0
— — rubrum, per doz., long	1 3- 1 6
— — — short	1 0 —

	s.d. s.d.
Lily-of-the-Valley, per dozen bunches:	
— extra special	15 0 —
— special	10 0-12 0
— ordinary	8 0- 9 0
Marguerites, per doz. bunches	1 6- 2 0
Narcissus, Soliel d'or, per. doz. bun.	5 0- 6 0
Nerines, per doz. spikes	3 0- 4 0
Orchids, per doz.:	
— Cattleya	9 0-10 0
— Cypripedium	1 6- 2 0
— Odontoglossum crispum	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches	5 0- 6 0
Poinsettias, per doz. blooms	9 0-12 0
Roses: per dozen blooms, Bride	1 6- 2 6
— Kaiserin Augusta Victoria	1 6- 2 0
— Lady Hillingdon	1 3 1 6
— Liberty	1 6- 3 6
— Madame A. Chatenay	1 0 2 6
— Melody	1 3- 1 9
— My Maryland	1 3- 1 9
— Niphetos	1 3- 1 6
— Prince de Bulgarie	1 6- 2 0
— Richmond	1 6- 3 6
— Sunburst	1 3- 2 0
— Sunrise	1 0- 1 6
— White Crawford	1 6- 2 6
Statice, mauve, per doz. bunches	3 6- 4 0
Stephanotis, per 72 pips	— —
Tuberoses, on stems, per doz	0 5- 0 6
— short, per doz.	0 4 —
Violets, English, per doz. bunches	2 6- 3 0
— Princess of Wales, doz. bun.	5 0- 6 0
White Heather, per doz. bunches	4 0- 6 0

Cut Foliage, &c. Average Wholesale Prices

	s. d. s. d.
Adiantum Fern (Maidenhair) best, per doz. bunches	5 0- 6 0
Agrostis (Fairy Grass), per doz. bunches	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz-bunches	12 0 18 0
— Sprengeri	6 0-12 0
Autumn foliage, various, per doz. bunches	6 0-10 0
Carnation foliage, doz. bunches	3 0- 5 0
Croton foliage, doz. bunches	12 0-15 0

	s d. s. d.
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch	1 0- 1 6
Fern, French, per doz. bunches	0 6- 0 8
Honesty, per doz. bun.	10 0 12 0
Lichen Moss, per doz. boxes	10 0-12 0
Moss, gross bunches	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
— French, per doz. bunches	1 0- 1 3
Pernettia, well berried, per doz. bunches	8 0- 9 0

REMARKS.—The recent cold weather has had an effect on the supplies of cut flowers, and better prices are being realised for Liliums, Gardenias, Richardias (Arums), Lily-of-the-Valley and Roses. Record prices are realised for Violets, and there are numerous enquiries for Marie Louise (double). A limited supply of Yellow Narcissus Soleil d'Or and white Narcissus is coming from Scilly. Poinsettias and a few Roman Hyacinths have reached the market this week. The supply of Carnations is large, and prices are advancing for good specimens. A few baskets of French Fern and Myrtle arrived last week, and although having been on the journey for several days, the foliage was in excellent condition. The supply of all varieties of foliage is large. Usually in November large quantities of cut flowers arrive in Covent Garden from the South of France, but the few baskets that have been received this week have been so long in transit as to be almost unsaleable.

Plants in Pots, &c.: Average Wholesale Prices

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri	6 0- 8 0
Aspidistra, per doz., green	18 0-30 0
— variegated	30 0-60 0

	s. d. s. d.
Begonia Gloire de Lorraine, 48's, per dozen	10 0-12 0
Cacti, various, per tray of 15's	4 0 —
tray of 12's	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s. d. s. d.
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen	10 0-12 0
Erica, gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 9 0
— hyemalis, 48's, per doz.	8 0-10 0
— — alba	10 0-12 0
— nivalis, 48's, per dozen	9 0-10 0
— — thumbs, per doz.	3 0- 5 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen	8 0-12 0
— in 32's, per doz.	10 0-18 0
Ficus repens, 48's, per doz.	4 6- 5 0
— — 60's, per doz.	3 0- 3 6

	s. d. s. d.
Geonoma gracilis 60's per dozen	6 0- 8 0
— larger, each	2 6- 7 6
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0 36 0
Latania borbonica, per dozen	12 0-30 0
Lilium lancifolium album, pr. doz.	18 0-24 0
— — rubrum, per doz.	15 0-21 0
— longiflorum, per dozen	15 0-18 0
Lily-of-the-Valley	—
— 48's, per dozen	24 0-30 0
Marguerites, in 48's, per doz., white	8 0-10 0
Pandanus Veitchii, per dozen	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Poinsettias, 48's, per doz.	9 0-10 0
Solanums, 48's, per dozen	8 0- 9 0
Spiraea, white, 32's per dozen	9 0-10 0

REMARKS.—Chrysanthemums have not been so plentiful this week, but there is still a glut of Ericas. Lilies of all kinds are realising better prices. Poinsettias in forty-eight pots are available, as also are white Spiraeas. There is a better demand for Ferns and Palms, and business generally appears to be more brisk than has been the case for the past few weeks.

Fruit Average Wholesale Prices.

Apples—	s.d s d
— English, cooking, per bus.	2 6- 4 0
— — dessert, per ½ bushel	2 6- 5 6
— Nova Scotia, per brl.	11 0-16 0
— United States, per barrel	13 0-16 6
— Californian, per box	5 0- 7 0
— Oregon, per box	7 0-10 0
Bananas, bunch:	
— Medium	6 0 —
— X-medium	7 0 —
— Extra	8 0 —
— Double X	9 0 —
— Giant	10 0-12 0
— Red, per ton	£20 —
— Jamaica, p. ton	£10 - £11
Cobnuts, per lb.	0 5- 0 6
Cranberries, per case	8 0-12 6
Grapes: Alicante, per lb.	0 7- 1 6

Grapes (*contd*)—	s. d. s d
— Almeria	10 6-15 0
— English, Gros Colmar, per lb.	0 10 1 9
— Muscat of Alexandria	1 6- 3 6
— Canon Hall, per lb.	2 0- 5 0
Medlars, per ½ sieve	3 0- 4 0
Melons	0 9- 2 0
Nuts, Brazils, p. cwt.	60 0 —
— Chestnuts, per bag	14 0-18 6
Pears, American, per barrel	20 0-32 0
— Californian, per case	8 0-14 0
— English, ½ sieve	3 0- 4 0
— stewing, per bushel	7 0- 8 0
Quinces, per ½ sieve	3 0- 5 0

REMARKS.—Supplies of English and Colonial Apples are still large, as also are those of Colonial Pears. Large quantities of Grapes are arriving from the Channel Islands, Belgium and home growers. Muscat varieties are not quite so plentiful as hitherto. Tropical fruits on sale include Persimmons, Avocado Pears, Custard Apples and Pineapples. Nuts of all kinds are plentiful. The supplies of Tomatos and Cucumbers are lessening. Good bundles of Paris Green Asparagus are reaching the market.—*E. H. R., Covent Garden, November 25, 1914.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	3 0- 3 6
Beans, French, per lb.	0 8 1 0
Beetroot, per bushel	3 0- 4 6
Brussels Sprouts, per ½ bus.	0 9- 1 0
Cabbages, per tally	6 0- 8 0
Carrots, per cwt.	2 6- 3 0
Cauliflowers, per tally	8 0-12 0
Celery, per doz. bun.	7 0- 9 0
Chicory, Belgium, per lb.	0 6- 0 8
Cucumbers, per doz.	3 0- 4 0
Eschallots, per cwt.	7 0 —
Garlic, per lb.	0 6- 0 7
Herbs, per doz. bunches	2 0- 9 0
Horseradish, English, per bundle	2 6- 3 0
Leeks, per dozen	1 6- 2 0

	s.d. s.d.
Lettuce, per doz.	1 6 3 0
Mushrooms, cultivated, per lb.	1 0- 1 6
— Buttons	1 0- 1 6
Mustard and Cress, per dozen punnets	0 10 1 0
Onions, per cwt.	10 0-12 0
Parsnips, per cwt.	4 0- 4 6
Peas	1 3- 1 6
Potatos, new	0 8 0 10
Seakale, per doz. punnets	12 0-15 0
Spinach, per bus.	2 0- 2 6
Tomatos, English, per doz. lbs.	4 6- 5 0
— seconds	2 0- 4 0
— Teneriffe, per bundle	12 0-20 0
Turnip, English, per cwt.	2 0- 4 0
Turnip tops, p. bus.	1 0- 1 6
Watercress, p. doz.	0 6- 0 8

REMARKS.—There are good supplies of forced Beans from the Worthing district, Guernsey, and Madeira. Very few Mushrooms are available. The price of Onions and Potatos is advancing. Vegetables are plentiful, and trade has improved in most departments during the past week.—*E. H. R., Covent Garden, November 25, 1914.*

New Potatos.

	s. d. s. d.
Bedford	3 6- 3 9
Blackland	3 3- 3 6
Dunbars — Up-to-date	4 9- 5 0

	s.d. s.d.
Dunbar - Langworthy	5 6 —
Essex	3 6- 3 9
Kent	3 6- 4 0
Lincoln	3 3- 4 0

REMARKS.—Trade is about the same as last week, and plenty of tubers are arriving in the market. *Edward J. Newborn, Covent Garden and St. Pancras, November 26, 1914.*

Obituary.

AUGUST WEISMANN.—We have to record the death of August Weismann, Professor of Zoology in Freiburg-in-Breisgau, and distinguished by his controversial and constructive contributions to the theory of evolution as well as by his researches in zoology. Born in 1834, Professor Weismann studied medicine and biology, and was appointed Extraordinary Professor in the University of Freiburg in 1866. Although he made many important contributions to biological science, Professor Weismann was best known by his strenuous support of the doctrine of natural selection, by his vigorous demolition of the opposing theory of the inheritance of acquired characters, and above all by his theory of the germ-plasm; a theory which, though it may not hold good in the absolute sense postulated by Weismann, is nevertheless adopted by the majority of present-day biologists. Professor Weismann possessed to a rare degree the power of expressing his views in vigorous language. His contributions to science are great, and ensure him a permanent and high place on the roll of honour of biologists.

DEBATING SOCIETIES.

CROYDON AND DISTRICT HORTICULTURAL.—At a recent meeting of this society Mr. C. P. Clayton delivered a lecture on "Fertilisers." The lecturer stated that phosphates tend to produce fruitfulness, and bone meal, bone flour, or fish guano contain a considerable amount of phosphorus. Other phosphatic manures are superphosphate of lime and basic slag. Mr. Clayton claimed to eradicate the disease in Plum Trees and other stone fruit, known as "silver leaf," by applying to the roots in the first year superphosphate of lime containing 40 per cent. phosphates in the autumn, 6 oz. to the square yard, and in the second and third seasons following 4 oz. to the square yard.

At the meeting of this society, held on Tuesday, October 20, Mr. Geo. Davidson, a local amateur, gave a lecture on "Dahlias." He drew attention to the usefulness of the Dahlia as a decorative garden flower and its long season of bloom, and also to the fact of its present immunity from disease. He went on to describe the method of culture and the merits of the different varieties.

CARDIFF GARDENERS'.—A meeting of this association was held on the 20th ult., when Mr. A. Fry lectured on "Apples," dealing with the subject from the market grower's point of view. He also gave a list of the most suitable varieties of Apples for growing in South Wales.

DUMFRIES AND GALLOWAY GARDENERS'.—At the annual meeting of the above Association, held in Dumfries on the 24th ult., the report of the secretary and treasurer, Mr. W. Taylor, was submitted and adopted. Mr. S. Arnott was re-elected chairman, and Mr. Wm. Hutchinson, Terregles Gardens, and Mr. Sturrock, Larchfield Nurseries, vice-chairman. Mr. W. Taylor, Brocklehirst Gardens, Ruthwell, R.S.O., was re-appointed secretary and treasurer, and a committee of eight was elected. The association meets in the Wesley Hall, Dumfries, on the first and third Saturday of each month.

——The opening meeting for the session was held in the Wesley Hall, Dumfries, on November 7. The president, Mr. S. Arnott, occupied the chair. Mr. John Croall, nurseryman and florist, Dumfries, gave an address on "Floral Decoration," illustrated by bouquets and other floral work of a decorative character.

BIRMINGHAM AND MIDLAND COUNTIES'.—On the 19th ult. Mr. Woolman, jun., Sendy Hill Nursery, Shirley, read a paper, entitled "The Chrysanthemum for Decoration and Exhibition." He commenced by reading several interesting extracts from a chronicle of the history of the flower. This began at the period when the Chrysanthemum belonged solely to the Orientals. Dealing with its cultivation, he explained the essentials that concern its growth. First came the initial "cutting stage"; then the second potting; lastly, the third and final potting. In each case he proffered many suggestions as to the sizes of the pots and the preparation of the different composts. At certain times a little feeding was helpful, but much of the failure in Chrysanthemum growing could be attributed to overfeeding. In considering the Chrysanthemum for exhibition, it was a mistake to think that the results of selecting certain buds one season could be taken as constituting exact formulae for another season, for the uncertain English climate had to be taken into consideration. After referring to several well-known favourite blooms of different shades, he concluded his address by passing a few remarks upon the twelve specimen blooms he had staged at the meeting. Subsequently these splendid flowers were sold at the suggestion of Mr. Woolman, sen., the proceeds, amounting to 5s., going to the Prince of Wales' Fund, to which the total sum of 19s. 3d. was contributed as the result of a collection.

——At the meeting of this association held on November 2 Mr. J. Higley, gardener to G. Hettlefeld, Esq., delivered an address entitled "The War: True and False Economies in the Garden." He stated that owing to the war employers generally had been compelled to enforce the strictest measures of economy; and this was most unfortunate for the garden, as employers as a rule commenced with the garden as the most appropriate place in which to curtail expenditure. But it was essential to discriminate between true and false economy, and Mr. Higley quoted instances where a saving could be effected without much harm resulting, and pointed to other cases where neglect was most unprofitable.

WARGRAVE AND DISTRICT GARDENERS'.—A meeting of this association was held on the 21st ult., when many members were present. Mr. W. Pope, of the Willows Gardens, read a paper on "Manures for Different Soils," chiefly confining his attention to those with which he had had most experience, viz.:—stable, cow and pig manure. He described the qualities of each and the kind of land which benefited most from them. It was advisable to turn them frequently before applying them to the land. He thought farmers would be wise to turn their attention to keeping more cattle, so that not only more manure might be available, but also a greater food supply. The mechanical effect of these manures was also pointed out. Lime, basic slag, and several other artificial manures were mentioned, and their use as supplementary to farmyard manure described.

——A meeting of this association was held on the 4th inst., when a paper on "Spring-Flowering Bulbs Under Trees" was read by Mr. A. Rogers, of Messrs. Waterer, Sons and Crisp's Nurseries. He referred to such details as time of planting, preparations of the ground, methods of planting and best varieties to use. The following were amongst the various bulbs mentioned:—Alliums, Anemones, Chionodoxas, Crocuses, Winter Aconites, Erythroniums (Dog's-tooth Violets), Fritillarias, Snowdrops, Muscari, Scillas and Ornithogalums.

READING GARDENERS'.—The fortnightly meeting of this association was held on Monday, the 26th ult., at the University College. The president occupied the chair, and there was an excellent attendance. The speaker for the evening was Mr. F. C. Drew (horticultural instructor at the college), who lectured on "The Pruning of Fruit Trees." Exhibits were numerous, a certificate being awarded to Mr. H. Goodger for runner Beans.

BATH GARDENERS'.—At the meeting of this society held on the 26th ult. a paper on "Perpetual Flowering Carnations" was read by Mr. C. Wall. Mr. Wall said that cuttings might be rooted at any time of the year, but January and February were the best months. Shoots from both the top and bottom of the plants could be used as cuttings provided they were healthy and strong. He only covered the cuttings with glass on bright days and uncovered them at night. The chief difficulty of the small grower was in providing bottom heat. As soon as frosts had passed the young plants were best grown in cold frames, but they should be protected from heavy rains. The lecturer gave the following hints for cultivators to remember: Never over-pot or over-water; do not feed Carnations in winter during dull, damp weather; never use rank or fresh manures; withhold manures until the pots are full of roots; never allow the cuttings to flag while rooting; protect the plants from rains at all times; always use fresh soil for potting; stir the top soil occasionally and keep the plants free from insect pests.

BRISTOL AND DISTRICT GARDENERS'.—A meeting of this association was held at St. John's Parish Rooms on the 29th ult. Mr. R. Jennings presided. The lecturer for the evening, Mr. Horace Wright, was unable to attend, and Mr. Barrow read a paper, entitled "Our Gardens in Autumn and Winter." Mr. Barrow gave advice on the management of the pleasure garden, fruit, vegetable and glass-house departments.

——A meeting of this Association was held on Thursday, the 12th inst. Mr. R. Jennings occupied the chair. Mr. Simms, a member of the Bath Debating Society, gave a lecture on "Orchids."

BRITISH GARDENERS' (Watford Branch).—The third monthly meeting of the session 1914-15 was held on the 10th inst. There was an excellent attendance of the members and their friends; Mr. W. R. Phillips presided. The subject for the evening was "The War and the B.G.A.," introduced by Mr. Harding.

GARDENING APPOINTMENTS.

[*Correspondents are requested to* **write the names of persons and places as legibly as possible.** *No charge is made for these announcements, but if a small contribution is sent, to be placed in our collecting Box for the Gardeners' Orphan Fund, it will be thankfully received, and an acknowledgment made in these columns.*]

Mr. G. Denby, of West Hall Gardens, Byfleet, and previously at Sutton Place, Guildford, as Gardener to Mrs. St. Aubyn, The Oaks, Sunninghill.

Mr. Maurice Craddock, for the past 3½ years Gardener to A. Chetwynd, Esq., J.P., Chestall House, near Rugeley, as Gardener to the Lady Berkeley Paget, Longden Hall, near Rugeley, Staffordshire.

Mr. Wm. Grundy, for the past 10 months at Bisbrooke Hall, and previously for 3 years at Papplewick Grange, as Gardener to J. T. Forman, Esq., Wilford House, Wilford, near Nottingham.

Mr. William Jaundrell, as Gardener to the Rev. H. E. Worthington, M.A., Netherseal Rectory, Ashby-de-la-Zouch.

THE WEATHER.

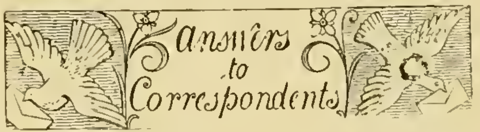
THE WEATHER IN WEST HERTS.

Week ending November 25.

The Coldest Week as Yet this Autumn.—This was a cold week throughout, both during the daytime and at night. On two days the temperature in the warmest part of day never rose above 37°, and on two nights the exposed thermometer indicated 13° of frost. The ground is at the present time 3° colder at 2 feet deep, and 4° colder at 1 foot deep, than is seasonable. Rain fell on two days, to the total depth of ¼ inch. On the first of those two days there were slight falls of snow and sleet. One and a quarter gallons of rainwater came through the bare soil gauge during the week, and for the first time since the middle of April, or for seven months, some rainwater came through the percolation gauge on which short grass is growing. Both gauges are a yard square and 2½ feet deep. The sun shone on an average for 2 hours 20 minutes a day, which is about forty minutes a day longer than is usual at the same period in November. Calms and light airs alone prevailed during the week. The mean amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by 5 per cent. *E. M.*

TRADE NOTE.

Messrs. R. Wallace and Co., Kilnfield Gardens, Colchester, have received the Royal Warrant appointing them nurserymen and purveyors of hardy Alpine and aquatic plants to her Majesty Queen Alexandra.



Answers to Correspondents

Berberis virescens: *A. T. H.* The mildew present on the specimen sent is Microsphaera berberidis. Remove the diseased tips of the shoots and spray the plants next spring when the leaves are unfolding with a solution of liver of sulphur.

Leaf Shrivelling: *M. G. A.* The leaf is not diseased. Excessive moisture has destroyed the tissue.

Manuring Roses: *Amateur Exhibitor.* If the soil is very heavy defer the top-dressing of the beds with manure until March, but if light and well drained the manure may be spread on the surface now. In either case lightly fork the manure beneath the soil and leave the surface fairly rough. Yes, you may cut back the side arms of the budded standard briars to within 12 or 15 inches of the inserted buds now. It is best not to shorten such shoots before November.

Names of Fruits: *Higham.* 1, Cox's Pomona; 2, Herefordshire Pearmain; 3, Allington Pippin; 4, De Neige (syn. La Fameuse).—*H. E. K.* 1, Annie Elizabeth; 2, King of the Pippins; 3, Small's Admirable.—*W. D. and Sons.* General Todleben.—*Langthorpe.* Decayed. — *R. C.* Fondante d'Automne. — *N. W. P.* 1, Marie Louise d'Uccle; 2, Gansel's Bergamot; 4, Doyenné d'Alençon. Two other fruits decayed and without numbers. —*F. P. D.* 12, Marie Louise; 13, Hacon's Incomparable; 14, Beurré Capiaumont; 15, Glou Morçeau; 16, not recognised; 17, Doyenné du Comice; 18, Olivier de Serres; 19, Court-Pendû-Plat; 20, Chaumontel; 21, Beurré Bachelier.—*S. D. Banister.* 1, Emile d'Heyst; 2, decayed; 3, Délices d'Angers (syn. Fondante du Panisel).—*A. E. Startin.* 1, Queen Caroline; 2, not recognised; 3, Orange Goff; 4, Crimson Quoining; 5, Greenup's Pippin syn. Red Hawthornden); 6, decayed; 7, Mabbot's Pearmain; 8, Small's Admirable; 9, Fearn's Pippin; 10, Malster; 11, King of the Pippins; 12, Sandringham.—*C. D.* 1, Warner's King; 2, Alfriston; 3, Emperor Alexander; 4, Lady Henniker; 5, Gooseberry Apple; 6, Braddick's Nonpareil; 7, Ribston Pippin; 8, Golden Noble; 9, Hoary Morning; 10, Newton Wonder; 11, Tyler's Kernel; 12, Wealthy; 13, Court-Pendû-Plat; 14, Stirling Castle; 15, Potts's Seedling; 16, Kentish Pippin (syn. Colonel Vaughan); 17, Sandringham; 18, Bramley's Seedling; 19, Greenup's Pippin (syn. Red Hawthornden); 20, Graham; 23, Gansel's Bergamot; 24, Beurré Bachelier; 25, not recognised; 26, Beurré Rance.—*W. G. W.* 1, Madame Eliza; 2, Bergamotte Esperen; 3, White Paradise; 4, Flanders Pippin; 5, Belle de Pontoise; 6, Hanwell Souring.—*D. W. T.* Withington Fillbasket.—*B. S.* In comparing the specimen sent with Doyenné du Comice we find it to be similar in shape and size, and we cannot detect any difference in flavour. If you will send fruits from the two trees between which the specimen sent was grown we might be able to come to some other decision, but at present we are of the opinion that the variety is Doyenné du Comice.—*C. L.* Beurré Sterckmans —*Y.* The fruits were gathered too soon, and consequently became shrivelled and out of character, so that it is impossible to determine the variety.

Names of Plants: *A. E. Tuck.* 1, Euonymus europaeus, scarlet berries; 2, Polygala Chamaebuxus var. purpurea.—*H. H.* Pleurothallis rubens.—*W. W., Eaton.* Cattleya labiata.—*Taxus.* 1, Cotoneaster frigida; 2, Thuya orientalis; 3, Cupressus Lawsoniana. We cannot give any readily recognised distinctions between the foliage of the Thuyas as a whole and that of the Chamaecyparis group of Cypresses. The cones, however, are very distinct, those of Thuya having flat, thin, overlapping scales, whilst those of Cupressus are top-shaped or almost T-shaped ("peltate" in botany).—*S. W. Ingram.* Crataegus orientalis. —*Inquirer.* Probably Rubus saxatilis; the specimen is incomplete.

Pears Failing to Ripen: *D. S.* In all probability the flowers were not fertilised, and, consequently, the fruits did not develop. Many Pear trees are self-sterile, and it is therefore advisable to plant in the vicinity of the tree another variety that will bloom at the same time.

Potato Disease: *H. E. K.* Winter rot is present on the Potato, but if sweating is prevented when the tubers are stored the disease may not develop further.

Richardia Elliottiana (syn. Calla Elliottana): *D. M. L.* Dormant tubers may be forced in a temperature of 65° to 70° from now onwards; the beginning of January is a suitable time to start them for general cultivation. Good, strong tubers should flower in about three months from the time of starting them, but much of the success will depend on the method of cultivation, temperature, etc. When growing, the plants require a temperature of 60° to 70°, but when in flower they may be stood in an ordinary greenhouse.

Rose Maréchal Niel: *W. H. A.* It would be unwise to prune the tree so severely as you propose. Retain most of the growths, merely removing the extreme ends of the shoots, which do not usually ripen. Cut back any of the side shoots or laterals that are very small and thin to four or five eyes from their base. Spread out the growths as much as possible, as this will ensure the rods breaking into growth lower down than if trained perpendicularly. The best time to prune this particular Rose is soon after it has blossomed, when some of the old wood should be cut away. By keeping the house close and maintaining a moist atmosphere the tree should make suitable growth for flowering by the autumn.

Worms in Turf: *J. T.* Slaked lime will materially assist in checking the worms, but only for so long as it retains its causticity. If your soil is very rich in humus worms will always be more or less in evidence, and it may be advisable to adopt more drastic measures. You may remove the turf and three or four inches of the soil, level the bed, and apply a dressing of ground gaslime to a depth of a quarter of an inch, covering the area evenly. Replace the soil and relay the turf. For the destruction of any worms which might appear thereafter in the turf use one of the many "worm destroyers" advertised.

Communications Received.—H. R., Holland (Your mistake was discovered; not serious)—R. F., Thibet (Cable received November 23).—Fairholm—W. H. A.—A. E. H.—R. P. B.—A. L. H.—H. F. Z.—V. H. B.—E. B.—W. W.—W. E.—A. J. M.—S. L. and Co.—A. J. H.—D. S. and Son—R. G. W.—R. C. N.—G. B. B.—C. R.—H. B.—J. M.—P. H. R.—A. P.—R. R.—W. D. and Sons, Ltd.—E. F.—G. W.

THE
Gardeners' Chronicle
No. 1,458.—SATURDAY, DECEMBER 5, 1914.

CONTENTS.

Abnormal flowering .. 373
Antirrhinum rust in America 372
Apples, a selection of .. 373
Apple trains in the West 372
Banding of fruit trees 373
Black spot in Roses .. 373
Books, notices of—
  Les Jardins de Plantes Vivaces 365
  Rural Improvement .. 366
Bouquet, the "Epaulette" 372
Bulb garden, the .. 366
Carnation Wells' Champion 370
Chrysanthemum Conference, forthcoming 372
Conifers, notes on—
  Cupressus Goveniana 364
Devon, notes from .. 364
Fruits, the history of cultivated 363
Gardens, old and new .. 373
Holmes, Mr. E. M. .. 372
Kelp industry in Scotland 372
Larkspur seed, insecticidal value of .. 372
Law note 378
Market fruit garden, the 366
Medicinal plants, the cultivation of 373
National diploma in horticulture 372
Obituary 378
Orchid notes 364
Panama Pacific Exposition, planting at the 372
Peas, late 373
"Pour nos amis français et belges" 367
Root crops, the 372
School-garden competitions 372
Societies—
  Lancaster Hort. .. 376
  Linnean 377
  Manchester & North of England Orchid 376
  National Chrys. .. 375
  National Dahlia .. 375
  Perpetual-flowering Carnation 376
  Royal Horticultural 374
Soil, fertility of the .. 370
Sulphur as a fertiliser .. 372
Tea statistics 372
Trading with the Enemy 373
Trees and shrubs—
  Celastrus articulatus 368
  Fatsia japonica .. 368
Victoria Medal of Honour 372
War items 370
Week's work, the 368, 369

ILLUSTRATIONS.

Bivort, Alexandre, portrait of 363
Carnation Wells' Champion. (Coloured plate.)
Cupressus Goveniana 365
Erythronium Hendersonii 371
Nesbit, Richard, portrait of the late 378

THE HISTORY OF CULTIVATED FRUITS

AS TOLD IN THE LIVES OF GREAT POMOLOGISTS.

V.—ALEXANDRE BIVORT.

A Great Belgian Pomologist.

In the history of Pomology it has seldom happened that the raiser of new fruits was at the same time a systematic pomologist. It may well be that an extensive acquaintance with the vast numbers of existing fruits induces a habit of mind which is chary of adding to their number. The systematist is always something of a pessimist. The raiser, however, looks to the future, and, careless of the work he may throw upon his confrère, proceeds to his work of foster-parentage with a cheerful optimism. As an illustration of this, Van Mons and Alexandre Bivort are good examples. Van Mons, though a man of science, possessed the inquiring mind, but not the precision which should keep this faculty in check. His records were kept in a very slovenly way, and the one book he wrote is sufficient evidence of his lack of attention to detail. In the matter of renaming fruits he showed no regard to the exactitude demanded by the systematist. The vast number of fruits he left was for the large part undescribed or recorded in any way which would render identification certain. To preserve the fruits of his great work, therefore, a systematic pomologist was a necessary complement, and in the subject of this article was found the right man.

Alexandre Joseph Désiré Bivort was born at Fleurus in March, 1809. His father was a man of means, but in the Belgian revolution, in which Van Mons was so nearly lost to horticulture, his fortune almost entirely vanished, and he therefore entered the legal profession. In this he prospered, and was able to give his son a good commercial education, first at the school of Melle, and later at the College of Alost. Having to earn his living, Bivort entered a coal business, in which his family had some interest, and his leisure was devoted to horticulture. After his marriage he settled at the small town of Geest St. Remy, near Joidoigne, and here he came into touch with M. Grégoire Nelis, whose enthusiasm for raising seedling Pears was infectious.

The turning-point of his life was, however, in 1840. In this year the great collection of seedlings which Van Mons had raised at his nursery in Louvain was about to be dispersed. Bivort had for some time been a friend of Van Mons, and knew the great value of this collection and its special interest from the point of view of Van Mons' theory. All the best fruits were, by this theory, expected to come from these later seedlings, and it was therefore of great importance that they should be saved from destruction. Bivort purchased Van Mons' collection, and removed the plants to his garden at St. Remy. From this time the main occupation of his life was cultivating and describing this remarkable collection of fruits.

ALEXANDRE BIVORT.

In 1848 he published the first volume of his *Album de Pomologie*, and a volume was published in each of the three following years. This work met with a good reception, and its coloured plates and excellent descriptions marked it as a great advance upon previous publications. The plates are of varying excellence, those in the later volumes showing a great improvement on the earlier plates. Leaves are generally depicted as well as the fruit, and they show—a thing not always seen in such illustrations—the different characteristics very fairly well. The descriptions are full and of great precision. The tree is described in all its parts with the exception of the flower. This complete description is a point often neglected by his predecessors, and often, be it said, by his successors. It is, however, of the greatest importance, and identification cannot be certain, in many cases, without this information. Some 400 fruits are described, a large proportion of them being the first published description of Van Mons' seedlings. Only one small criticism can be urged, and that is the absence of any page or plate numbers in the first volume. The bibliophile is therefore oppressed by the uncertainty as to whether his copy is or is not complete.

The cause of fruit culture in Belgium was at this time greatly helped by the Minister of Agriculture, Charles Rogier, and by his advice the late King Leopold instituted a Royal Commission on this subject, with a view to publishing a work which should illustrate in the most sumptuous manner the pomological riches of the country. The result was the *Annales de Pomologie Belge et Etrangère*, annual folio volumes of which were published from 1853 to 1860. There have been few commissions that can point to so tangible a result! The editors were L. de Bavay, the well-known nurseryman of Vilvorde, whose name is known in this country by the Plum named after him; Auguste Royer, the famous pomologist; Auguste Hennau, professor at the College of Liége; and Bivort himself as secretary. With this array of talent, it is not surprising that the *Annales* were accepted at once as authoritative, and that they achieved an immense success.

Very many of the descriptions by Bivort were taken from his *Album*, but corrected and revised. The work includes some short cultural details, an interesting glossary of terms, and an account of Van Mons' theory in popular language.

In 1853 family reasons compelled Bivort to remove from St. Remy, and once again the trees of Van Mons were on the point of destruction. Thanks, however, to the help of Auguste Royer, they were taken over by an Association called the Société Van Mons, and for some years this society flourished with Bivort as director. On the death of Royer, and the withdrawal of the Government subsidy, the trees could no longer be preserved, and were destroyed.

Bivort's last work was entitled *Les Fruits du Jardin Van Mons*, a task unhappily unfinished. This work must be extremely scarce, as I have never yet found a copy in the Continental or English libraries that I have visited.

Though interested primarily in Belgian fruits, Bivort was a constant correspondent with foreign pomologists, and his relations with Wilder and Downing, of America; Oberdieck, of Germany; and Millot, of Nancy, were very cordial. He was in great demand as a judge at fruit shows, and he thought highly of the opportunities they provide for the study and revision of the nomenclature of fruits. The number of fruits he introduced was remarkable, and amounted to over seventy-five. Not many of these, however, are now existing in our gardens, but the following are still to be found in Continental and some few British nurseries and gardens: — Alexandre Lambre, Bergamotte Heimbourg, Beurré Bennert, Comte de Paris, Beurré Berckmans, Docteur Trousseau, Duc d'Aumale, Madame Elisa, Prince Albert, Willermoz.

Bivort's claim to eminence as a pomologist, however, does not rest, as has been said, on his introductions, but on his records of the gains of Van Mons and other raisers, and systematic pomologists especially owe him a debt of gratitude for his great work in this field. *E. A. Bunyard.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT ST. ALBANS.

A house full of the richly-coloured Cattleya Mantinii Sander's type is a fine sight in Messrs. Sander and Sons' nursery, and the plants will continue in bloom for some time to come. Many hundreds of Cypripedium flowers are seen in the several houses devoted to these Orchids. The numerous varieties of C. insigne, C. Leeanum, C. Fairrieanum crosses, and several novelties of the C. Dreadnought type show that this fine section is not yet worked out.

A large batch of Laelio-Cattleya Hyeana Sander's variety which has been shown so well at the summer exhibitions this year promises to be even better next season. There are also fine forms of L.-C. bletchleyensis, L.-C. Britannia, L.-C. Walter Gott, L.-C. Phoenix, and other Laelio-Cattleyas; whilst of Brasso-Cattleyas there are some choice plants in bloom. In the Odontoglossum houses are many handsome hybrids, brought from the firm's establishment at Bruges; one beautiful hybrid of O. Lambeauanum has extra large flowers of fine shape and charming colouring. Many plants in the collection of Masdevallias are in bloom. A new importation of Odontoglossum Rossii majus includes some in flower, showing the good quality of the batch imported. Forms of Cattleya Fabia show the extremes between the white form and the very dark Ruby King and Dreadnought varieties; a plant of C. Hardyana alba, the finest form, has four flowers on a spike. A large batch of Laelia Gouldiana promises a wealth of rose-purple bloom for Christmas. The firm has received a large consignment of Osmunda fibre via Antwerp. The fibre just managed to get through by a few hours only, and is probably the last that will be received for some time to come.

HYBRID ORCHIDS.

(Continued from p. 272, October 24, 1914.)

Hybrid.	Parentage.	Exhibitor.
Brasso-Cattleya Admiral Jellicoe	C. Lord Rothschild × B.-C. Digbyano-Mossiae ..	Armstrong and Brown.
Brasso-Laelio-Cattleya Gordon Highlander	B.-C. Madame Chas. Maron × L.-C. Aphrodite ..	Sander and Sons.
Brasso-Laelio-Cattleya Seaforth Highlander	B.-C. Mrs. J. Leemann × L.-C. Aphrodite	Sander and Sons.
Calanthe Branchii	Textori × Wm. Murray	C. J. Lucas, Esq.
Cattleya Ledru Rollin	Carmen × Fabia	A. Meyer, Esq.
Cattleya Maroniris	Maronii × Iris	Armstrong and Brown.
Cattleya Pandemus	aurea × Mrs. Mahler	Armstrong and Brown.
Cattleya Snowdon	Suzanne Hye de Crom × labiata alba	Armstrong and Brown.
Cattleya Thebes	C. Adula × C. Dowiana Rosita	J. Gurney Fowler, Esq.
Cypripedium West Point Beauty	Fairrieanum × Druryi	Sander and Sons.
Dendrobium Triumph	D. thyrsiflorum × D. Dalhousianum (pulchellum) ..	Armstrong and Brown.
Laelio-Cattleya Brutus	C. Warscewiczii × L.-C. bletchleyensis	Armstrong and Brown.
Laelio-Cattleya Nestor	C. Warscewiczii × L.-C. Ophir	Hassall and Co.
Laelio-Cattleya Paruda	L.-C. Geo. Woodhams × C. Mrs. Mahler	Armstrong and Brown.
Laelio-Cattleya Patheus	L.-C. Geo. Woodhams × C. Armstrongiae	Armstrong and Brown.
Laelio-Cattleya Pirus..	L.-C. luminosa × L.-C. elegans	Armstrong and Brown.
Laelio Cattleya Priola	L.-C. Geo Woodhams × C. Mrs. Pitt	Armstrong and Brown.
Laelio-Cattleya Prohus	C. Octave Doin × L.-C. Geo. Woodhams	Armstrong and Brown.
Laelio-Cattleya Pronax	L.-C. elegans × L.-C. Geo. Woodhams	Armstrong and Brown.
Laelio-Cattleya Pylos	C. Caduceus × L.-C. Geo. Woodhams	Armstrong and Brown.
Odontoglossum Cunnynhame	Rio Tinto × crispum	Sander and Sons.
Odontoglossum Irene..	Thompsonianum × Uro-Skinneri	Charlesworth and Co.
Odontoglossum Minos	harvengtense × Lambeauanum	Richard Ashworth, Esq.
Odontonia Magali Sander var. xanthotes	M Warscewiczii alba × O. ardentissimum xanthotes	Charlesworth and Co.
Sophro-Cattleya Ariadne	C. Schilleriana × S. grandiflora	Armstrong and Brown.
Sophro-Cattleya November..	C. Portia × S. grandiflora	J. Gurney Fowler, Esq.
Sophro-Cattleya Pearl	S.-C. Doris × C. Portia	J. and A. McBean.
Sophro-Laelia Felicia Fowler's variety ..	L. pumila × S.-L. heatonensis	J. Gurney Fowler, Esq.
Zygopetalum Blackii	Perrenondii × crinitum	Flory and Black.

CORRECTIONS.

Odontoglossum Irenius (Pescatorei × Vulcan), *Gard. Chron.*, June 13, 1914, not Irene as stated.
Gard. Chron., Nov. 14, 1914, Cattleya Birex = C. Tankervilliae, *Gard. Chron.*, Sept. 5, 1903, p. 181.
Cattleya Alpha = C. Apelles, *Gard. Chron.*, April 9, 1910, p. 237, Sir Geo. L. Holford.
Brasso-Laelio-Cattleya Gladius = B.-L.-C. Surprise, *Gard. Chron.*, Nov. 27, 1909, p. 364.

NOTES FROM DEVON.

GREENWAY.

Greenway, the property of Mr. T. B. Bolitho, situated on the banks of the River Dart, possesses an exceptionally interesting garden, in which there are numbers of rare and tender plants. There is growing the largest specimen in England of the Chilian Nut, Guevina avellana, which was illustrated in these pages on September 8, 1906. It is over 24 feet in height, with a spread of 25 feet, and in September is covered with hundreds of flower-spikes, 4 inches in length, bearing about two dozen small, ivory-white blossoms, with narrow, twisted-back petals and stamens half an inch long. These are followed by berries at first green and then purple, about the size of marbles. A few plants have been raised from seed, but the majority are propagated by layers. Grevilleas succeed to perfection, a fine bush of G. Preissii being full of flower as late as October. The white-flowered G. pendula had climbed to the top of a 10-foot wall. The scarlet-flowered G. longifolia was also in excellent health. A large plant of Clematis indivisa lobata had covered a great expanse of wall, and flowers profusely early in April. Of Veronicas there were the new white-flowered V. macrocarpa, the purple V. Veitchii, the rose-pink V. Gauntlettii, and V. Simon Delaux, a rich crimson. Escallonia montevidensis had made prodigious growth, and was still in full flower, and the rare Abelia triflora was bearing its white blossoms. A great plant of Fremontia californica had been carrying hundreds of its large yellow flowers and was the picture of health, though many of these plants die suddenly when they reach a large size. A tall and spreading example of Cytisus proliferus had ascended far above a 12-foot wall, and two good plants of Melaleuca armilaris, growing against walls, produce their white bottle-brushes freely. The Persimmon growing against a wall has fruited here, and Inga pulcherrima bears its scarlet flowers in July. A fine specimen of Paulownia imperialis, 25 feet in height, is covered with blossom in the spring, and there is a good example of Lagerstroemia indica, though not approaching the splendid one at Abbotsbury. Acacia cultriformis has covered a space of wall 12 feet by 16 feet and flowers well annually. A strong plant of Bignonia speciosa bears its mauve, Gloxinia-like flowers in the summer, and B. capensis was still bearing its red blossoms in October. Eutaxia floribunda produces Pea-shaped orange flowers in the spring, and there was a good plant of the new Prostanthera rotundifolia, which bears purple blossoms. There was a fine bush of Eucryphia pinnatifolia, which flowers freely in the early autumn, but does not approach in size the specimen at Mr. Bolitho's other garden at Trewidden, Penzance, which is over 20 feet in height. Trees of Embothrium coccineum were looking in good health; Feijoa Sellowiana had flowered well, and Correa cardinalis was carrying hundreds of buds. The rare Colquhounia coccinea had borne its deep red blossoms, and Jasminium Beesianum its scarlet flowers; while Abutilon vexillarium was still holding a few red and yellow blooms. A fine plant of Freylinia cestroides against a wall has never flowered, but the late Mr. Gumbleton told me that he had had it for 25 years without blooming it, so that it will probably never flower in England. Thunbergia Harrisii, said to be a native of India, has climbed to the top of a Thuya Lobbii 60 feet in height, and its growths are trailing down on all sides. A great shrub of Brachyglottis repanda was cut to the ground by the severe frost of 1912, but shot up strongly from the roots, and is now about 4 feet high. In an open glade in a sloping wood is a collection of about a dozen fine Tree Ferns, Dicksonia antarctica, in the best of health. In my own garden Amaryllis Belladonna blanda flowered superbly, sixty-six bloom-spikes being cut, the produce of a single bulb brought from South Africa about thirty years ago. Nerine Fothergillii major, N. Bowdenii and N. flexuosa alba also flowered well in the open. *Wyndham Fitzherbert.*

NOTES ON CONIFERS.

II.—CUPRESSUS GOVENIANA.*

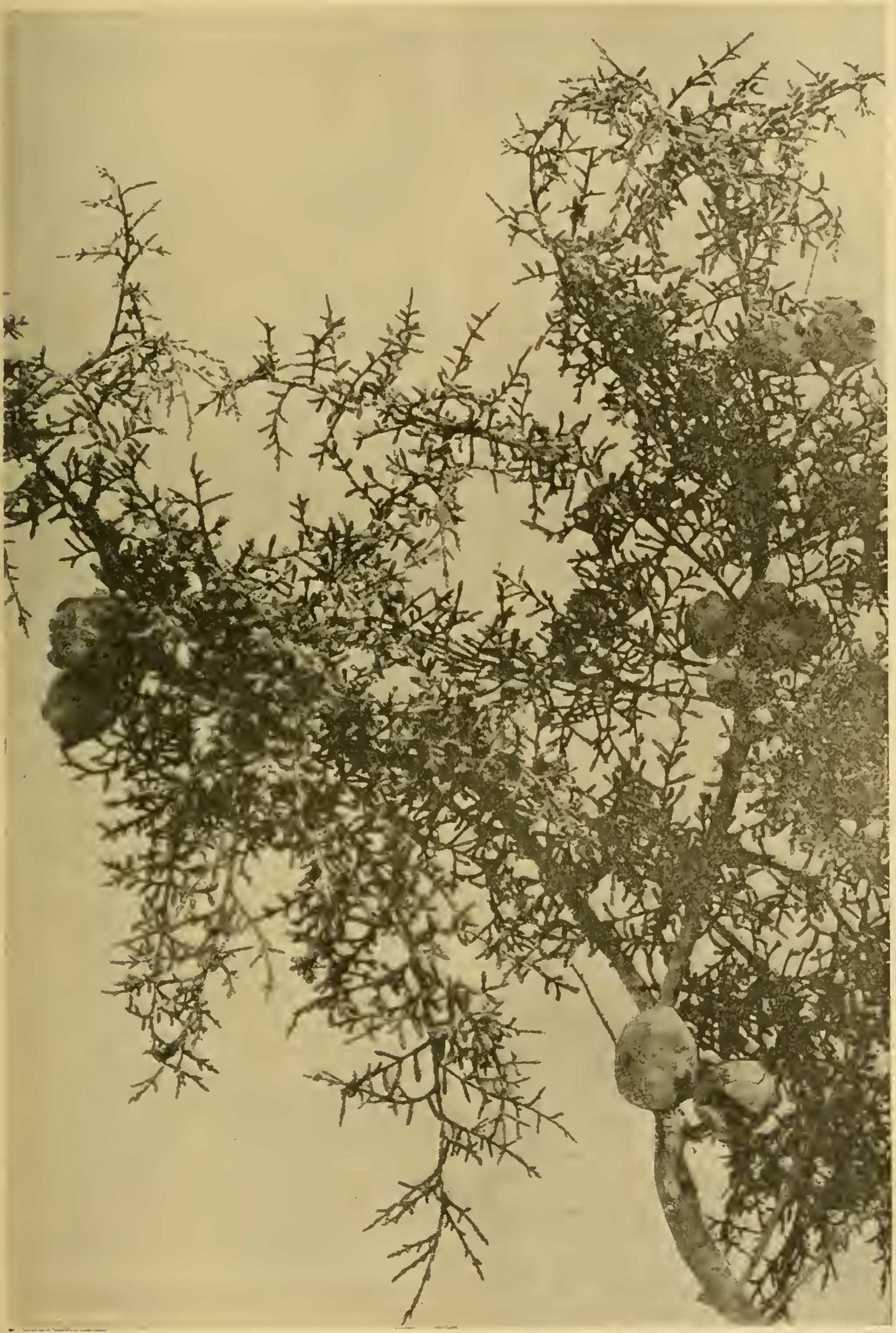
This is one of the three Californian Cypresses now in cultivation, and was so named after J. R. Gowen, who was secretary to the Horticultural Society at the time of its discovery and introduction in 1846. It was found by Hartweg on the western declivity of the mountains of Monterey, in Upper California, within two miles of the seashore, in company with Pinus muricata. It is at once distinguished from the better-known Cupressus macrocarpa of the same region by its smaller cones and quadrangular branchlets, which are differently arranged. It is widely distributed in the hills of the coast mountains from Mendocino County, near Ukiah, to San Diego County, where it often becomes shrubby in habit. Seeds were sent to England by the discoverer, and young plants were first raised in the Horticultural Society's garden at Chiswick.

Cupressus Goveniana, though usually hardy, is not a long-lived tree, and has perhaps less to recommend it from the gardener's standpoint than the more graceful species familiar to Conifer lovers, but when well grown its peculiar and rigid yellowish-green foliage, abundance of staminate flowers and clusters of reddish-brown cones, which ripen in the second year, make it a very desirable subject for the pinetum. It is now difficult to obtain from the nurserymen, but good trees are occasionally met with in older collections of Conifers in the South and West of England. One of the best of these at Boconnoc, Cornwall, has attained a height of 43 feet by 6 feet 8 inches in girth. Another at Luscombe Castle is still taller, 50 feet high, but only 4 feet 4 inches in girth. One of the finest I have myself seen is a tree in the famous collection at Dropmore, which is a healthy specimen of conical habit 36 feet high and 5 feet 6 inches in girth.† It produces cones freely, as will be seen from the photograph, which represents a specimen half natural size, kindly sent me by Mr. Page, the gardener. I have seen other well-grown examples at Pencarrow and Heligan, Cornwall, and Ponfield, Herts. Messrs. Elwes and Henry also mention specimens from Barton, Suffolk, 38 feet by 2 feet 6 inches, in 1905 (planted in 1862); Tortworth, 40 feet by 5 feet 1 inch; Eastnor Castle, 37 feet by 3 feet 2 inches at 3 feet; Victoria Park, Bath, 46 feet by 4 feet 8 inches; and Coldhayes, E. Liss, 35 feet by 6 feet 2 inches at the base of trunk.‡ In Ireland trees from 40 feet to 50 feet are reported from Castlemartyr (Cork), Fota, Woodstock (Kilkenny) and Churchill (Armagh).

---

* Cupressus Goveniana, Gordon in *Journ. Hort. Soc.*, IV., 295, with fig. (1849); Masters in *Journ. Linn. Soc.* (Bot.), XXXI., 346 (1896); Sargent, *Silva N. Amer.*, X., 107, t. 527 (1896); Kent, *Veitch's Man. Conif.*, 204 (1900); Clinton-Baker, *Illust. Conif.*, II., 72 fig. 2 (1909); Elwes and Henry, *Trees of Great Britain and Ireland*. V. 1171, t. 299 (1910).

† Figured in *Trees of Great Britain*, loc. cit., t. 299.



[*Photograph by E. J. Wallis.*

FIG. 138.—CUPRESSUS GOVENIANA.

In addition to the typical form represented in the photograph, there are four well-marked varieties of this species characterised as follows:—

Var. attenuata, Carrière, *Conif.*, 172 (1867). —Branchlet systems more loosely arranged, the ultimate divisions very slender.

Var. pendula, Carrière, *Conif.*, 127 (1855).—A shrub, with long pendulous branchlets, the leaves being often spreading and sharp-pointed, indicating a transition form between the seedling and adult stages. A plant of this occurs at Kilmacurragh, Co. Wicklow.

Var. pygmaea Lemmon, *W. Amer. Cone-bearers*, 77 (1905).—Usually a shrubby form, producing cones with small blackish seeds, but occasionally on good soil it becomes larger, as at Barton, Suffolk

Var. Sargentii, Henry, *Trees of Great Britain*, loc. cit., 1173.—Cones larger than in the type, with large, reddish-brown, glaucous seeds. *A. Bruce Jackson.*

NOTICES OF BOOKS.

Les Jardins de Plantes Vivaces.*

If it is true that imitation is the sincerest flattery, British gardeners will find just cause for gratification in M. Laumonnier-Férard's recently issued book. Its purpose is to advise and encourage French gardeners in the more extended use of hardy perennial and annual plants, and in forming gardens in what wo call the natural style in place of the formal bedded-out system. He frankly and generously tells us that England has given the lead in the return from stiff bedding to the use of beautiful plants in a manner that will permit of the development of their natural beauties of habit, and that the gardens of Kew, Kensington, Hampton Court, Regent's Park and Wisley are models all the world should see and admire. As the book is evidently intended to help the amateur and private gardener, it seem a pity that the author has not instanced some of the private gardens that are to be found so freely in England. That this style of gardening is still quite new in France is apparent from the list of such gardens already formed by our brave Allies, and the mention of a few others in contemplation. As we cannot but feel it represents, if not the noblest and most magnificent style of gardening, at any rate the most entrancing and home-making, let us hope a period of peace and prosperity may at no distant date turn the thoughts of our neighbours across the Channel to the soothing occupation of planning and making gardens "*dans le vieux style anglais.*"

It is pleasant to find that the late Sir Richard Wallace's garden, acquired in 1905 by the city of Paris, is cited more than once as a successful model and forerunner of this branch of gardening.

The book is very thorough and deals with perennials from most points of view, for cutting, for rock gardens, as isolated specimens in turf, in light woodland shade, and so forth. Ferns, aquatics and climbing plants each have a chapter given over to them. A second division of the book treats of the herbaceous garden in the four seasons, also as arranged for special colour effects, and the wild garden; while the third part gives descriptions of what the writer considers the best perennial plants to use for the various purposes already outlined. This part is arranged alphabetically, but under the French garden names of the plants.

There is but little for an English gardener to learn from this book, its interest to him lying mainly in the evidence it affords of a desire for information as to the better uses of perennials on the other side of the Channel, and one feels that a good French translation of the useful handbook, Robinson's *English Flower Garden*, would be the next step upward and onward. Such alarmingly misprinted names as Sempervivum flagellifzorme are not of frequent occurrence, but the nomenclature in use is rather unorthodox. The evil practice of a few nurserymen's lists has been followed in some cases—e.g., Sternbergia lutea and Crinums, Nerine and Zephyranthes being placed in the genus Amaryllis, and the names Crocus elegans and Byzantina are not found in the *Kew Hand List*. Primula denticulata appears twice over, but the first time clearly as a misprint for Bulleyana, as shown by the mention of its yellow flowers in the description

---

‡ See also *Gardeners' Chronicle*, 1872, p, 285, for a note on this Cypress at Castle Kennedy.

* *Les Jardins de Plantes Vivaces.* Par E. Laumonnier-Férard. Avec 36 planches hors texte et 13 plans. Paris: Libraire agricole de la Maison Rustique. 12 francs.

It is curious that for a country like France. with such a gloriously rich alpine flora of its own, the lists of rock-garden plants should be so poor; for instance, it contains only six Primulas, P. Forbesii acaulis and cortusoides being three of them, neither of which are exactly rock plants according to our ideas, and an apocryphal species called P. alpina making a fourth. The thirty-six plates from photographs strike one as lacking the effect of brilliant sunshine one associates with summer in France, but are instructive as showing the degree of success landscape gardening on natural lines has reached in modern French gardens. If anyone has room for a bold planting, he may find good hints in the groundwork of Iberis sempervirens broken by groups of Iris and Paeony in the Parc Monceau (opposite p. 48), and the pleasantly contrasted grouping of tall and dwarf plants with trees for background in the Parc Sainte Marie at Nancy, shown opposite p. 80.

RURAL IMPROVEMENT.*

We hope that this sane and persuasive book will have a wide circulation in this country; for although it deals with the problem of rural improvement as it presents itself to American eyes the wisdom and practical suggestions which it contains are serviceable wherever the "rural problem" exists—and that is everywhere.

That problem is the rural contribution to the spirit of restlessness of our times, and that restlessness is not to be exorcised by abuse. Its causes must be diagnosed and then, if possible, removed. Everywhere—in Great Britain, in France, in Norway, in the United States and in Canada—there is a movement of the countryman into the town, and mere shouting "Back to the land" will not stem that movement. The author of this work, Mr. Frank A. Waugh, hopes and believes that the evocation of a corporate spirit, and the direction of that spirit to the work of rural betterment, may do much to quicken the interest of the countryman in his countryside, and awakened interest may lead to improvements that may help to keep him on the land.

Here in this country the problem is so complex that the wiser among us evade it and leave the work of winning the people back to the land to mere enthusiasts. The famous speech comparing the relative attractions of circus and parish councils represents the bankruptcy of the politician with respect to constructive ideas on this question. Mr. Waugh holds that if the people are to be kept on the land they must make it pay and make it pleasant. There must be roads fit to walk on and houses fit and pleasing to live in, and meeting places for the men and for the women, and, in short, all those accessories to corporate life without which that gregarious animal man merely obeys his natural instinct in migrating to the town.

To small men such and similar improvements are out of the question, and it is too much to hope that anything like a general amelioration of country life for people not well to do should be undertaken under our present unhappy-go-lucky system of government—a system which makes schools like barracks and denies playing fields to those who most need them—the children of the poor, which, if it chance to supply a village hall, only too often contrives to make it an infinitely less attractive place than the village inn. For these reasons we hope that Mr. Waugh's common-sense recommendations may be studied widely by people in this country, since not until there is a widespread desire and detemination to secure a countryside habitable and enjoyable by the not rich will the problem of rural depopulation solve itself.

Publications Received.—***War Time and Peace in Holland : A Free Farmer in a Free State.*** By J. W. Robertson Scott. (London: William Heinemann.) Price 6s. net.

THE MARKET FRUIT GARDEN.

November a Good Month for Out-door Work.

The weather of November varied greatly. It was generally splendid for the time of year in the first half of the month, and indeed for the greater part of the first three weeks. There was a fair quantity of rain in the course of the first four days, and again after the twelfth, with slight frost on several nights after the latter date, and a bitterly cold north-east wind for a short time later on. In the last week the rainfall was somewhat excessive, except for filling up ponds and flushing springs. On the whole, however, the month was remarkably pleasant for November, and conducive to work on the land, which was facilitated by the rain and the frosts, as well as by the sunshine.

Digging Orchards.

This work, so far as it has been done, has been carried out under strikingly favourable conditions, as it always is when a moderate rainfall follows prolonged drought. The soil to the slight depth to which it is desirable to turn it over in plantations of fruit trees and bushes, except where it is actually clay, was so friable that the labour involved was much less than usual, and the men engaged in it, if paid the usual price per acre, earned good wages. My own price is 25s. per acre, which is higher than it is for fair digging in Kent, and the men engaged in the work, for the time actually made, earned 4s. a day. As they are casual hands, they lost a little time on two or three rainy afternoons, but would have done fairly at 22s. per acre. There was very little rubbish to deal with, and this was a great advantage to them.

Favourable Planting Conditions.

From what has been stated in the preceding paragraph it may be assumed that planting up to the present time has been executed easily and well. I have never known it to be carried on more expeditiously.

Does it Pay to Store Apples?

The answer to this question depends upon circumstances. In a bad-keeping season, such as 1913-14, the loss from rotting is too great for any profit to be realised by keeping Apples over Christmas. In that season my Bramley's Seedling, which had made only 4s. 6d. a bushel early in October, were sold at 7s. to 7s. 6d. early in January. For this particular variety there was probably a considerable profit due to storing; but other varieties had to be sold early in November after much loss from rotting had been sustained, so that, on the whole, storing was a failure. In 1912-13 Apples kept well, but prices failed to rise after November. On the 25th of that month I made 7s. per half-sieve of an excellent sample of Cox's Orange Pippin, and on January 1 some were sold at the same price, and some at 6d. more. Selected Coxes actually fell in price when kept till the first week of January. Lane's Prince Albert sold at 4s. a bushel on November 28 and at the same price in December. Bramley firsts were all kept till December, and in the first half of that month they made 6d. a bushel more than some kept till January 8. Allingtons did better, making 3s. 6d. to 4s. per half-sieve on January 6 as compared with 3s. on November 25. In 1911-12 there was a great advantage in keeping Bramleys till the first week of February, when they made 7s. a bushel. In the present season Apples are keeping remarkably well, and prices have already risen greatly above the miserable rates current in September and a good part of October. This, however, is due largely to the reduced importation of American and Canadian Apples. When supplies of these Apples come freely, it does not usually pay to store the fruit unless it can be kept at least until January, and February is a better time to sell. Of course, only the best keepers can be kept so long, and only perfectly sound fruit. Apples to be stored should be looked over carefully, all bruised or otherwise faulty fruit being taken out of the bulk. Of course, too, a properly-constructed fruit-room is essential to success in keeping Apples till the New Year.

Cover Crops in Orchards.

Differences of climate and methods of culture explain why cover crops in arable orchards are general in the United States, and never or hardly ever seen in this country. A cover crop is defined by Mr. Sears in *Productive Orcharding* as "any crop grown in the orchard solely for the benefit of the trees." This is what it should be, but it often is a crop which is at least partly sold off. The crop is sown late in the summer or early in the autumn, and ploughed under in the spring. Its purposes are to prevent the washing of the soil during autumn, winter and early in the spring; to add humus to the soil, and, in the case of a leguminous crop, nitrogen also; to take up and hold plant food at a time when the fruit trees do not need it; and to prevent falling fruit from injury. Mr. Sears also mentions the checking of the growth of the fruit trees in autumn by the cover crop taking from the soil some of the food and water which otherwise would be available to the trees. This, he thinks, induces the trees to ripen their wood before winter. Injury to the roots of trees in winter, he adds, is also prevented by the cover crop.

Now, the last two purposes of a cover crop would not count for much, if for anything, in this country, as we do not, so far as I know, have frost severe enough to kill unripened wood or to injure the roots of trees. But the other purposes are as applicable and valuable to secure here as in the United States. Nevertheless there are insuperable objections to our adoption of the cover-crop system, unless we are to change our methods of fruit culture. In the first place, while bottom fruit is growing under the trees, cover crops are out of the question; and when this has heen removed the distance between the trees is usually too small for ploughing Even if we increased the distance, ploughing deeply enough
in a cover crop in the spring would cut
the roots of trees. In this country we e
shallow rooting, which American grow
courage, presumably from fear of frost
So far as I can see, there are only t
under which we could grow cover crop
vantage. One is that of growing such a crop as Trifolium, and digging it in with forks in the spring, possibly cutting it first. The other is that of growing a cover crop which would be killed by frost in winter, such as Mustard. Fertilisation and the prevention of soil washing by heavy rain would be secured by such a crop, and weeds would be smothered; but hoeing would be difficult in the spring and possibly digging would be necessary. But to walk about in a crop of Mustard even 6 inches high in the course of winter pruning, and again when winter spraying, would often be like wading in a pond, while the crop would be trampled badly. On the whole, the disadvantages of growing cover crops in British orchards seem to outweigh the advantages. *A Southern Grower.*

THE BULB GARDEN.

EARLY FLOWERS.

We have the Paper-White Narcissus beginning to open the flowers in a cold frame, and whilst it is the earliest variety, I cannot remember anything to equal this. The first batch of Roman Hyacinths and Paper Whites cultivated in heated frames are in full bloom, and they required very little firing. Indeed, most bulbs are very forward, and it is most likely due to the very hot weather in late summer and early autumn. *H. Rabjohn, Twickel Castle Gardens, Delden, Holland, November 18.*

---

* *Rural Improvement.* By Frank A. Waugh. (London: Kegan Paul, Trench, Trübner and Co., 1914.) Price 1 dollar 25 cents.

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

LA BELGIQUE SOUS LES ALLEMANDS.

UNE LETTRE DU RÉDACTEUR EN CHEF D'UN JOURNAL HORTICOLE BELGE.

(*Suite de la p.* 360.)

Depuis des semaines, les Allemands font dans un grand nombre de localités à l'Est de Bruxelles l'appel des jeunes gens nés en 1894 et 1895. A Hoeylaert, ces deux classes représentent environ cent conscrits : sept seulement, dont quatre invalides, avaient répondu à l'appel. Les autres avaient fui en masse pour rejoindre l'armée belge. Ailleurs l'appel s'étend à tous les hommes de 17 à 45 ans. Pour éviter l'exode, les Allemands gardent les ponts et passages à niveau. Seul le passeport, délivré uniquement aux personnes âgées, assure la circulation. Je ne serais pas étonné d'apprendre que ces mesures ont été étendues à tout le pays.

Enfin en ce qui concerne mon arrivée à Londres : j'avais été appelé à Anvers pour des questions de service. En temps normal il suffit de 36 minutes pour y aller de Bruxelles. Pendant le siège on ne pouvait guère y parvenir qu'en faisant un détour par Grammont, Sottegem (en camion ou à pied) et Gand (train), et on s'estimait heureux quand on accomplissait le trajet en deux jours. Au moment de mon arrivée à Gand, l'accès d'Anvers n'est plus possible ; j'apprends que le gouvernement s'est transporté à Ostende et de là au Havre. J'ai pris ultérieurement un petit steamer qui m'a amené en 26 heures à Rotterdam d'où j'ai gagné Londres. *Hector Van Orshoven, agent t*[illegible]*que à l'Office Horticole, Bruxelles, Rédac*[illegible]*hef du* Tuinbode, *Belgique.*

LA SITUATION À GAND.

[illegible]ttre suivante reçue à Londres le 28 novembre dernier, résume les impressions d'une personnalité du monde horticole gantois. Comme on pourra le voir, ces renseignements confirment ce que nous avions dit déjà au sujet de Gand.

"Je vais essayer de vous mettre au courant de ce que je sais sur la situation de l'horticulture dans la banlieue gantoise ; j'ignore ce qui se passe dans le reste du pays.

Depuis l'occupation par les Allemands, je me suis rendu dans divers endroits et j'ai la satisfaction de vous faire savoir que nos établissements horticoles n'ont pas souffert. Nulle part, je crois, des dégâts y ont été causés. Je puis même vous renseigner quelques faits qui montrent comment nos cultures ont été épargnées.

Devant un de nos beaux champs de Bégonia un médecin militaire allemand s'est arrêté plein d'admiration ; il demande quelques fleurs, mais ne veut pas les cueillir lui-même de crainte d'endommager les plantes ; la fillette du fleuriste lui confectionne un bouquet pour lequel il faut accepter un mark. Chez un de nos grands horticulteurs, qui s'était enfui en Hollande, les soldats allemands ont trouvé l'une et l'autre chose, mais pour ce qui concerne les serres, certains soldats ont demandé au contre-maître *l'autorisation* de les visiter.

Si je puis vous donner d'excellents renseignements sur la situation matérielle de nos cultures, il n'en est malheureusement pas de même en ce qui concerne le côté financier. Les exportations vers l'Europe Septentrionale et l'Amérique du Nord ont, jusqu'à présent, pu se faire à peu près normalement, mais depuis le début de la guerre tout trafic avec l'Europe Centrale et Méridionale est arrêté. Il en est résulté que la moitié, peut-être les deux tiers des plantes, sont restées invendues ; de plus le commerce n'a nullement intéressé tous les établissements, et, alors que certains ont fait d'assez bonnes affaires, beaucoup d'autres n'ont pour ainsi dire rien vendu.

Je suis persuadé que faute de fonds un grand nombre d'horticulteurs seront dans l'impossibilité de se procurer le charbon nécessaire ; et si l'hiver est un peu rude, la majeure partie de leur stock de plantes sera détruite. Jusque dans ces derniers temps on a redouté que l'approvisionnement de combustible ne fût insuffisant, mais les nouvelles récentes nous permettent d'espérer que des mesures pourront être prises. Mais surgit toujours la question du sort des horticulteurs dépourvus de fonds ! *Je crains que certains parmi eux ne soient totalement ruinés s'ils ne peuvent vendre des plantes.*

Ce serait une excellente chose, si on pouvait trouver le moyen d'écouler des produits en ce moment ou immédiatement après l'hiver. Ne pourriez-vous pas, directement ou par l'intermédiaire du *Gardeners' Chronicle*, faire quelque chose dans ce but ? On pourrait d'ici fournir les renseignements nécessaires pour que les horticulteurs nécessiteux fassent les premières transactions.

Quoi qu'il en soit, voici ce qui nous reste en quantités considérables : bulbes de Bégonia, Kentia, Araucaria, Phoenix. Une énorme quantité d'Azalées de toutes espèces et dimensions encombrent les serres, mais je crois qu'il sera impossible d'en vendre encore cette année.

Nous nous efforçons d'arranger tout sur le pied normal mais le défaut de moyens de transport constitue une énorme difficulté. Jusqu'à présent nous n'avons pas ou trop à nous plaindre do l'occupation, mais que sera-ce plus tard ? "

NOUVELLES DIVERSES.

SOCIÉTÉ FRANÇAISE DES ROSIÉRISTES.

Le secrétaire général de cette importante association a eu l'amabilité de nous faire parvenir des nouvelles pour lesquelles nous le remercions vivement :—Je lis avec un très vif plaisir la chronique spéciale que vous avez eu la si heureuse idée de consacrer à vos amis belges et français. Permettez-moi de vous féliciter de cette aimable et cordiale initiative et de vous donner par la même occasion des nouvelles de notre société et de quelques uns de ses membres. La guerre a surpris la Société française des Rosiéristes, en pleine prospérité comme vous le savez, mais celle-ci supportera vaillamment les événements et au lendemain de la victoire elle reprendra sa marche brillante. Nous avons du suspendre momentanément notre luxueuse publication, mais aussitôt que possible nous la reprendrons. Notre dévoué Président d'honneur perpétuel, M. Jules Gravereaux, de l'Hay, a ses deux fils et son gendre mobilisés ; son fils Henri, qui est un des plus actifs vice-présidents de notre société, est capitaine de cavalerie ; les nouvelles assez récentes reçues à son sujet sont bonnes. M. Pernet-Ducher, notre premier vice-président, a ses deux fils à la guerre et parmi les membres de notre comité administratif plusieurs sont aussi mobilisés. Le comité administratif de notre société est composé surtout de rosiéristes lyonnais, j'ai donc assez fréquemment de leurs nouvelles. Jusqu'à présent nous n'avons heureusement aucune perte à déplorer ; certains ont été blessés mais sont en voie de rétablissement. Si une phlébite double qui m'a tenu alité du mois de janvier au mois d'août derniers n'exigeait que je prenne encore de grands ménagements et ne me rendait impropre au service militaire, j'aurais eu l'honneur d'être au rang des combattants. Notre trésorier, M. Schwartz, rosiériste à Lyon, est au feu depuis plusieurs semaines et notre vice-président, M. Croibier, rosiériste lyonnais également, est mobilisé depuis le début de la guerre. Le premier est sergent-major d'infanterie, le second maréchal des logis-chef d'artillerie. J'ajouterai, pensant que celà vous intéressera aussi agréablement, que la vie commerciale, agricole et industrielle dans la région lyonnaise n'est pas aussi ralentie qu'on pouvait le craindre. La population civile est pleine de confiance, la meilleure preuve en est dans la reprise progressive des affaires.

Notre société a mis à l'étude la question de débaptiser les variétés de Roses portant un nom allemand. Cette question ne pourrait être résolue utilement qu'après un échange de vues entre les sociétés nationales de rosiéristes des pays alliés et neutres. Veuillez agréer, cher monsieur, l'assurance de mes sentiments amicaux et dévoués. *Albert Boutin, Secrétaire Général, Lyon, le 25 novembre, 1914.*

M. Closon.—Nous recevons la communication suivante :—C'est aujourd'hui seulement que je lis dans la partie française de votre périodique, que vous êtes sans nouvelles de l'établissement L. Jacob-Makoy et Cie., à Liége. M. Jules Closon, qui est le propriétaire de cette maison, est bien connu dans le monde horticole et estimé non seulement par ses collègues belges, mais également à l'étranger. A presque toutes les expositions horticoles belges et internationales on le voyait comme membre du jury. Aussi sera-ce avec satisfaction que les nombreux amis apprendront que M. Closon et sa famille sont en excellente santé. Au commencement d'août, lorsque les bombes allemandes éclataient sur Liége, la famille s'est réfugiée à Ostende, et de là, lorsque le séjour y devint dangereux, en Hollande. Peu après on apprit que l'établissement n'avait que peu souffert des ravages des Allemands, mais il était indispensable de retourner, car les cultures, qui consistent principalement en Palmiers, Azalées, etc., allaient être détruites. Des 30 serres, deux seulement avaient été atteintes par les bombes. Le fidèle cbef M. Emile Donnea, qui compte déjà 50 ans de service dans la firme, n'avait pas quitté son poste et était resté seul à soigner les plantes. M. Closon et son fils aîné, qui s'occupe également des affaires, résolurent donc de retourner à Liége, où ils trouvérent leurs maisons intactes. Il semble impossible d'engager des ouvriers et ces messieurs doivent eux-mêmes travailler ferme pour éviter de grandes pertes. Il est très difficile d'obtenir des nouvelles de Liége, mais il semble que, malgré l'occupation allemande, il y fait calme. Les Allemands sont en train de faire des tranchées autour de la ville ; les forts sont reparés et renforcés. J'ai chez moi deux demoiselles Closon ; si on vous demandait d'autres renseignements sur leur famille, je serais donc à même de les donner. *B. Ruys, Dedemsvaart, le 24 novembre, 1914.*

Les Pommes de terre sont, on le comprend, très chères. En Belgique on les payait il y a deux mois déjà au double du prix normal ; en Hollande, qui probablement en exporte de fortes quantités vers l'Allemagne, elles font 15 et 16 francs les 100 kilogrammes. A Paris elles viennent de suoir en quelques jours une nouvelle hausse de 2 francs.

Emploi.—Nous avons eu le plaisir de procurer un emploi, chez Lord Lilford, Lilford Hall, Oundle, Northants (jardinier, M. F. W. Gallop), à M. Paul De Tollenaere, fils d'un jardinier bien connu du Tournaisis.

TREES AND SHRUBS.

CELASTRUS ARTICULATUS.

It is difficult to account for the neglect in which this beautiful climber has been left by lovers of ornamental trees and shrubs. It was originally introduced to cultivation by Prof. Sargent, who sent seeds to Kew more than forty years ago. It is a deciduous climber of great vigour, at first supporting itself by twining its stems round whatever it finds available, and then sending out long, arching shoots into the free air. At the present time these long shoots are furnished with fine crops of brilliantly coloured fruits. Allied to Euonymus, this Celastrus has very similar fruits; at first Pea-shaped, three-valved capsules, they split open about middle November, showing the golden yellow inner surface of the valves, and the handsome, shining, scarlet-coated seeds. They retain their beauty until January if unmolested by birds, which are not, however, so fond of them as of most highly coloured fruits. A cluster of untrimmed Oak branches, say 12 feet high, and set firmly in the ground, make a good support, although still better would it be if some decrepit deciduous tree could be given up to it. It is a native of N.E. China and Japan.

FATSIA (ARALIA) JAPONICA.

Except in the gardens of the south-western counties (where some magnificent examples of this evergreen may be seen), Fatsia japonica is most often condemned to an inglorious existence in a pot, stuck in a front row of plants in a cool conservatory. For such a place, its handsome, large, strikingly-lobed leaves, its tolerance of shade, and its good nature under adverse circumstances, admirably fit it. That it is, however, worthy of a better fate is shown by a group now flowering in the collection of hardy Araliads at Kew. They form the most striking feature in the grounds. Each branch is terminated by an erect, pyramidal panicle of globose flower-heads, averaging about a foot in height and in width, each head of flowers two inches or so in diameter. They are of a milk-white hue, both the main and secondary stalks being of the same colour. The fruits are black, globose, and about ¼ inch wide, very like those of the Ivy in colour and arrangement. This shrub needs a sheltered spot, and even then may suffer in hard winters, but it recovers during the ensuing summer. Plants at Kew have been left unprotected in the open for more than twenty years. *W. J. B.*

VERONICA EDINENSIS.

This is one of the last hybrid shrubby Veronicas which originated in the garden of the late Mr. Robert Lindsay, of Kaimes Lodge, Midlothian, formerly curator of the Royal Botanic Gardens, Edinburgh. It is, also, in the writer's opinion, one of the best of these fine plants for the rock garden. I am not sure of the exact parentage, but it is most likely a cross from V. cupressoides (see *Gard. Chron.*, Jan. 7, 1888, pp. 20, 21) and V. pimeloides. There is a distinct trace of its affinity to the former species in the charmingly imbricated foliage and in the general habit of the plant. I look upon it as one of the very best of the hardy shrubby Veronicas, which play such an important rôle in the rock-garden. It is under a foot high in my garden, and makes a spreading bush of delightful greenery and with white flowers in summer. It is not a free-bloomer here, and its main value lies in its pretty foliage and agreeable habit, which are all that can be desired for the rock garden. It is hardier than V. cupressoides. *S. Arnott.*

Versatile Apple Tree.—At a recent exhibition at Oceana, U.S.A., 84 varieties of Apples were exhibited from a tree that had been grafted with 135 varieties.

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

Seed-sowing.—Many of the winter-flowering Cypripediums and certain of the late autumn-flowering Cattleyas, Laelias, Laelio-Cattleyas and allied Orchids mature their seed-pods at about this time. The seeds of the Cypripediums are usually ripe when the seed vessels are matured, and should be sown at once, for new seeds germinate best. It may be desirable to retain a portion of the seeds with a view to sowing them in the new year. The reason that the seeds germinate so well now is probably because of the small amount of moisture evaporating from the seed-beds as the roots require but little water in winter. It is best to sow the seeds on the compost of established plants of the same kind, selecting those with the rooting materials in a good condition. The seeds of Cattleyas, Laelias, and Orchids of allied genera, on the contrary, are, in most cases, sown on specially prepared seed-beds. A warm, humid atmosphere and plenty of light are essential in the successful germination of the epiphytic Orchids. The seed-pods of most of these Orchids burst whilst they are green and sappy, and require careful attention to prevent them decaying and turning into a mass of pulp instead of maturing their seeds. It is a good plan to cut off a portion of the flower-stalk with the seed-pod attached, and place it in a paper bag, with the top of the bag open sufficiently to allow of moisture escaping. The package should be suspended in a dry, light position, where the seeds will ripen. The latter will only germinate readily in plenty of light, and when once germination has commenced the seedlings should not be subjected to a check of any description. In these circumstances, unless the conditions are exceptionally favourable, it is advisable to defer the work of sowing until the middle of January. Cool Odontoglossums and Odontiodas do not usually ripen their seed until the new year; if any pods are bursting now take measures to prevent the seeds being lost. Paper may be tied about them for the purpose, and it must be arranged so that moisture will not accumulate about the seeds. A few of these seeds may, if ripe, be sown now, but it is best to wait until the weather is finer and brighter. Seeds sown late this summer and autumn have not germinated so satisfactorily as usual. The weather at the start was unusually dry, and later it turned wet and dull. It is a good plan to raise the seed-pots or pans to within a reasonable distance of the roof-glass. By doing this not only will the seeds receive more light, there will be less danger of the compost becoming excessively damp.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Cordon Fruit-trees.—The growing of fruit on cordon trees has much to recommend it, and is especially suitable where considerable numbers of varieties are required to be grown and the wall space is limited. At one time this system of training was largely restricted to Pears, Apples and Cherries, but now Plums, Gooseberries and Red and White Currants are grown as cordons. Not only are such trees an advantage where wall space is limited, but by planting cordon trees of the choicer kinds of dessert fruits in various aspects, the crop can be hastened or retarded as desired, and it is questionable if any other system of training gives such good results in so small an amount of space. These fruit-trees can be planted in the intervening spaces between espaliers on walls, and they will prove remunerative almost in their first season. Later they may be removed as the permanent trees require more space. Well-managed cordon trees usually form a compact mass of small, fibrous roots in a moderately small area, and receive scarcely any check on transplanting if the work is done in the proper season. They can be utilised for filling up any odd space on walls, including corners, which are not suitable for other kinds of trees. The roots are well under control and may be fed systematically, whilst the trees may be sprayed with a minimum of labour. When the main shoot has reached the top of the wall, the subsequent training is simply a matter of pinching out the superfluous growth during the summer. There is no better time than the present for planting cordons. One important point in the cultivation of the trees is never to allow the small fibrous roots to suffer damage from drought or exposure to severe weather.

Pears.—Probably more Pear trees are trained as cordons than any other kind of fruit, and in many gardens a wall of cordon Pears is a good feature. There are various styles of cordon training. They may be grown to single, double or triple stems in an oblique manner; also as horizontal single or double cordons, which are useful for planting in front of bush or pyramid fruit-trees, close to the edge of a path. Such trees give a tidy finish to a plantation of fruit-trees. Horizontal cordons should be trained to wires strained between small posts about a foot above the ground level.

Cordon Apples.—Apples are often trained as cordons on walls in gardens in the colder parts of the country in order to obtain choice fruits for dessert. By planting cordon trees of such dessert varieties as Cox's Orange Pippin and Ribston Pippin on warm walls, ripe fruits may be had much earlier than from trees in the open garden.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Anemone.—It is not too late to plant Anemone coronaria for successful flowering. The plants will grow in any good soil provided it is free from fresh animal manure and moderately dry, through being well drained. The roots may be set at 4 to 6 inches apart and 2 to 3 inches deep. During mild seasons plants in sheltered situations flower continuously throughout the winter and spring; those planted early in the spring flower in May or June. In cold, low-lying gardens it is advisable not to plant these Anemones before December, and the beds should be protected with a few dry leaves, held in position by means of branches of evergreens; but this protection should be removed as soon as growth appears above the soil. If a cold frame is available to protect the plants from frost and rains a supply of these handsome flowers can be obtained in considerable quantities. We grow the St. Brigid varieties and A. fulgens in this way. A. apennina and A. atrocoerulea may be planted in irregular groups in grass. They are very beautiful when in bloom in the spring, and the effect is enhanced if A. nemorosa, the common white Anemone of the woods, is associated with them.

Camassia.—The Quamash may be naturalised in grass in prepared stations, removing some of the old soil and replacing it with sandy loam and leaf mould. Plant five bulbs in spaces about a foot square and set them about 2 inches deep. The two best garden species are C. esculenta and C Cusickii; both produce lavender-coloured flowers on tall stems. They flower in May and June and the blossoms are very effective with other plants that have been naturalised in the grass.

Erythronium.—The Dog's-tooth Violets may be treated in the same way as the Camassia, and there is no prettier sight than a large group of these plants naturalised in short grass; the foliage is marbled and very pretty. One of the best species for the purpose is E. dens-canis, and others to be recommended for the bulb garden are E. grandiflorum, E. giganteum, E. Hartwegii, E. Hendersonii and the variety Pink Beauty. All these plants grow best in a partially shaded situation and in well drained soils. Other plants that may be recommended for naturalising in grass include Leucojum vernum, L. aestivum, the spring and summer-

Snowflakes; Muscari conicum Heavenly Blue and M. plumosum (Grape Hyacinths). They may be planted now and treated as recommended for Camassias. The clump will increase in size and the plants continue to flower for many years.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Tree Carnations.—Some growers root cuttings of tree Carnations at this time, but our plants are mostly potted and breaking well into growth after having been stopped, for the climatic conditions in this district and in the north generally are not favourable for rooting Carnation cuttings in December and January. In the south, where the conditions are more favourable, the cuttings may be rooted now. For raising large quantities of plants the sand bed is to be recommended. A propagating frame should be placed in a house having a temperature of 55°. A quantity of rough material should be placed in the bottom of the frame for drainage purposes, and on this should be placed a layer of sand 4 inches in depth. Press the sand very firmly. Select healthy cuttings from the stems of the flowering shoots and remove the lower pair of leaves, keeping them fresh and free from drooping. The cuttings should be dibbled into the sand 2 inches apart, watered, and the glass or hand light placed in position. Moisture condensing on the glass must be removed each morning, and whilst doing this the air in the frame will be changed. A little bottom heat is an advantage, but the temperature of the bed need not be more than 60°. Carnation cuttings may also be inserted around the edges of small pots, plunging the pots in a bed of Coconut fibre. As roots develop admit air gradually, and when the plants are ready for potting transfer them to 2-inch pots and place them in the frame again for a few days. Afterwards they may be removed to a shelf close to the roof-glass. When the shoots have grown 6 or 7 inches long pinch out the tips to cause the plant to grow bushy. One-year-old plants in flower need an abundance of fresh air, and if the atmosphere is very moist a little fire-heat should be employed to prevent any excess. Details to observe include tying the flowering shoots and the young growths to stakes, and disbudding the flowers. Plants that supplied the earliest blooms may be removed to an airy pit, and grown on with a view to furnishing cuttings in January. Plants in flower should be top-dressed with blood manure, sprinkling a small quantity on the surface, or a little may be dissolved in the water applied to the roots.

Lilium longiflorum.—A few of the best-rooted plants of Lilium longiflorum grown from retarded bulbs should be introduced into a warm house to furnish a supply of flowers at Christmas.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

The Orchard House.—The trees, whether grown in pots or planted out in a border, should now be pruned and made ready for forcing. Trees that have been grown in pots or tubs for several years may have reached a condition in which they produce but few fruit buds. They may be brought into a fruitful condition again by pruning, with a view to encouraging fresh growth, re-potting them and afterwards treating them as maiden trees. The flower-buds should be removed for a season or two, and the tree encouraged to make a quantity of fruiting wood. As a rule Cherry and Plum trees in pots require but little pruning when they have reached a fruiting condition, for they seldom then make coarse, useless shoots when the roots are grown in a small space. It is generally only necessary to regulate the fruiting spurs—thinning them where they are crowded, and removing any wood growths that are not required. In the case of the Peach and Nectarine the leading shoots and some of those on the lower parts of the trees should be shortened with a view to inducing strong growths to develop, as fresh shoots may be required to furnish the tree. Such shoots may be cut back fairly hard, otherwise the buds at the ends will take the lead, and in all probability produce only very weak growths; the pruner must be guided in the degree of pruning by the strength of the shoot. In the case of young trees brought under glass for the first time, shorten the shoots to a growth bud. If too many buds are allowed to remain many of them may fail to develop, and some may drop when the sap commences to rise. After the trees have been pruned they should be cleansed as recommended in a previous calendar. When everything has been attended to, including the top-dressing of the roots and the scrubbing of the pots, arrange the trees in position, placing the taller ones at the back. The trees will be ready for the forcing houses in January, February, or March, according to the time ripe fruits are required.

Strawberries in Pots.—The earliest batch of Strawberries in pots may be brought into a house or pit having a temperature of about 50°, placing them close to the roof-glass. If a low pit or brick frame, where plenty of top ventilation can be admitted in favourable weather, is available, the plants may be plunged in a gentle hotbed made of leaves and stable manure in equal parts. The plants may be sprayed overhead on bright days with tepid water, and at such times the temperature may be allowed to rise to 60°. If syringing is practised less moisture will be required at the roots, and this is an advantage, for it is harmful to make the soil excessively moist at any time, and especially before the roots have become active. Plants that are stood upon shelves in a greenhouse or pit need very careful watering, for the position is a dry one, and the soil becomes drier much sooner than when the pots are placed on a damp stage or plunged in a hotbed. Directly greenfly or red spider is detected on the foliage either fumigate the house or treat the plants with an insecticide, and continue this treatment until the pest is eradicated. Plants still out-of-doors should be plunged to the pots' rims in a layer of ashes, leaves, or similar material. This is done to save the pots from being cracked by frost, and not to protect the plants, for the crowns will suffer no injury from severe cold.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Winter Greens.—Rosewort Coleworts are most useful at this time, and the plants are well hearted. Unfortunately this Brassica is not perfectly hardy, so that the crop should be used as expeditiously as possible, meanwhile saving the Brussel Sprouts, which to some extent they resemble in flavour. Scotch Kale is also very delicious, now that the cold has rendered it tender eating. The plants will furnish a very large amount of green vegetables if gathered carefully. As in the case of Brussel Sprouts, the heads should not be cut but only single leaves gathered, a few off each plant at a time. In spring the heads may be cut, and if the plants are then fed by a stimulant they will develop a large crop of side-shoots.

Cabbage.—The earliest Cabbages are much too far advanced, for they have never received the slightest check since they were planted. The latest batch is just ready to be earthed, which at this season can be done with advantage only when the ground is sufficiently dry for the tools to work without clogging. It is remarkable that many late Cabbages have not yet finished growing. Where they have done so, and especially in districts where the winters are severe, the old plan of lifting the plants with soil attached to the roots should be practised. They will keep in a perfect condition for many weeks in a cold shed or outhouse. In former years cottagers who had no better means to preserve their Cabbages buried the heads in the ground with the roots upwards, and this simple expedient always proved satisfactory.

Protecting Crops.—Celery should be protected during times of severe frosts. Straw or the dried stems of any of the tall grasses, such as Phalaris (Gardener's Garter) are suitable, Where plenty of bracken Fern can be had the dried fronds are excellent protective material, and should be worked in among the foliage. Bracken is not so liable to be blown out of position as either of the other materials. I have, in a previous calender, noted how useful leaves are to protect Globe Artichokes. This year we are short of leaves, and are substituting Gardener's Garter. It is important to place here and there a spadeful of soil on the stems of the grass to keep them in position, but any protection for this crop should be of a nature that will not cause rotting and as light as possible to be effective.

Broccoli.—After a brief period of no Broccoli the winter varieties are now turning in. At no season does this crop need more attention than now, and all plants that should be hearting need to be examined at short intervals and the heads cut when sufficiently large. The curds are usually very small, but there is a danger of them being damaged and rendered useless by wet or frost if left to gain in size. Where there are plenty of glasshouses and frames larger heads may be obtained by lifting the plants whilst the heads are small and transferring them to a cool house or pit. The leaves should be tied together before lifting the roots with as large a ball of soil attached as possible.

THE "FRENCH" GARDEN.

By Paul Aquatias.

Old Manure Beds.—The black soil from these beds is ready for placing in ridges in preparation for the spring work. The whole width of 65 feet is divided into five equal parts. In the centre of each portion a ridge is made 4 feet wide at the base and 3 or 4 feet high, according to the quantity of black soil available. The surplus material is carted away. To save labour the plot allotted for crops to be grown without heat may be prepared beforehand by deep digging. In placing the frames in position, allow for paths 1 foot wide between each row. The surplus material from the old manure beds should be placed in the frames at the rate of 6 to 9 barrowloads in each. Level the soil and cover the frames with the lights in readiness for sowing and planting early in January.

Nursery Beds.—Seedlings are making good progress. Lettuces require plenty of ventilation, especially the variety Passion, for if they are grown hardy they will be less liable to injury from frost. The frames in which Cauliflowers are grown also need ventilating day and night or growth will be sappy and leggy. Do not requisition the mats for covering the frames until severe frosts threaten. Supports should be placed along the main paths for placing the mats on when not in use, as the mats soon rot at this time of the year. Prepare fresh beds for the second transplanting of the seedlings. Whenever possible the beds are top-dressed with dry, sifted black soil stored under cover for the purpose. Lift the plants carefully, remove all decayed leaves, and set them 14 per cloche instead of 30, as at the first transplanting.

Manure.—This material becomes scarcer every year, and where hot-beds are the chief feature of the establishment a supply should be collected forthwith in order to have the necessary quantity before the end of January. An average of six tons for each bed is sufficient, with ten to twenty tons extra for lining both hot and cold beds—rearing seedlings in the spring. Where manure is scarce, cold cropping is resorted to, and, by lining the frames. an early crop of Lettuces will be obtained from the end of March. There is every reason to believe that there will be very little forced produce from France or Belgium this coming season, and a little extra exertion may well repay the wise grower. It may be pointed out that Dutch salading is imported in larger quantities every year, chiefly from April 10 until the end of that month, and during that time prices are low. Only Lettuce Little Gott from the "cold work" is available at that period, and it may pay to plant the Passion variety instead, as this variety is only ready at the earliest from April 20.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* Publisher; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* Editors. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication, *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, &c., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DECEMBER 8—

B.G.A. (Watford Branch) meet. Paper on "Chinese Shrubs," by Mr. W. J. Hunter.

WEDNESDAY, DECEMBER 9—

Nat. Chrys. Soc. Show and Conference at Essex Hall, Strand.

THURSDAY, DECEMBER 10—

Nat. Rose Annual Meeting at Connaught Rooms, Great Queen Street.

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 40.7.

Actual Temperatures :—

London, *Wednesday*, December 2 (6 p.m.) : 54°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London : *Thursday*, December 3 (10 a.m.); Bar. 29.3; Temp. 48°. Weather—Bright.

SALES FOR THE ENSUING WEEK.

MONDAY, WEDNESDAY AND FRIDAY—

Dutch Bulbs, Herbaceous and other Plants, at 67 and 68, Cheapside, E.C., at 12, by Protheroe and Morris.

MONDAY AND WEDNESDAY—

Rose Trees, Shrubs, Perennials, and Bulbs, at Stevens' Rooms, King Street, Covent Garden, at 12.30.

WEDNESDAY—

Azaleas and Plants, at Protheroe and Morris's rooms, at 4.

THURSDAY—

Roses, at Protheroe and Morris's rooms, at 1.

The Fertility of the Soil.

We offer no excuse for returning once again to the discussion of soil fertility. It is a subject which claims the constant attention of all gardeners, and one, moreover, with respect to which much remains to be learned. The immediate occasion for our present discussion of soil fertility is the publication* of an important paper by Mr. A. D. Hall and his colleagues, Miss Brenchley and Miss Underwood.

The immediate purpose of their enquiry was to discover whether the somewhat revolutionary views on the nature of soil fertility advanced by the American investigators, Messrs. Whitney and Cameron, are or are not sound. These views may be stated briefly as follow: Since all soils contain practically the same compounds of phosphoric acid and potash, and since these compounds are but sparingly soluble, all soil solutions—which are the sources of supply of mineral matter to the plant—must contain approximately the same amounts of these food-materials, and the amounts that they contain must be independent of the actual amounts of phosphoric acid and potash present in the soil.

The essential idea may be illustrated by an example. Suppose a cupful of water can only dissolve one lump of sugar, then it will not matter, so far as the strength of the sugary solution is concerned, whether one or a dozen lumps of sugar be added.

If this conception of the soil-solution be admitted it becomes necessary to seek in some other direction for the explanation of the well-known differences in fertility which obtain between one soil and another. Accordingly Messrs. Whitney and Cameron suggest that observed differences in fertility of soils are to be explained by the diverse capacities of soils to maintain a supply of water to the crop. Similarly, in order to meet the well-established fact that the addition of phosphatic and potash fertilisers to the soil results in increased yield, these observers suggest that such additions produce their effects by destroying or putting out of action specific toxins which, excreted by the plant, exercise a depressing action on the growth of other plants.

In order to test the truth of this hypothesis Mr. Hall and his collaborators had recourse to certain of the Rothamsted plots, the cultural history of which is on record.

Soil solutions were prepared from these plots—which had grown Wheat and Barley for 60 years and upwards—and Wheat and Barley were grown in these solutions by the well-known method of water-cultures.

The results show conclusively that the growth of the water-cultures runs strictly parallel with that of the plots from which the several soil solutions were taken. Those plots which, by reason of manuring with phosphate and potassic manures, give large crops, give also a soil-solution in which the water-cultures flourish. On the other hand, the impoverished plots give a soil-solution, the cultures in which reflect the poverty of the plot from which the solution is made.

Nor was there any sign of toxic action. If such action exist it should be evident in soils which have borne the same crop for so many years, yet Wheat grew as well in soil-solutions from Barley plots as in those from Wheat plots. Another series of experiments demonstrate in equally conclusive manner that growth varies directly—though not proportionally—with the concentration of the solution, although the total mineral food present in the solution is in excess of the requirements of the plant. It must therefore be concluded that the Whitney-Cameron hypothesis is unsound; that, as taught long ago by Daubeny, differences of soil fertility depend on differences in the amount of available mineral food-materials, and that phosphates and potash, added to the soil, exert a direct influence on growth by putting at the disposal of the plant a larger amount of these indispensable substances. It is, of course, true that soil fertility depends also on other factors, and particularly on the relation of the soil to water; nevertheless it is a relief to find that when a gardener talks of feeding his plants with superphosphate or with kainit he is as strictly accurate as is ordinarily possible in an imperfect and ill-explored world.

Our Supplementary Illustration represents one of the newer varieties of Perpetual-flowering Carnations. It was given an Award of Merit by the Royal Horticultural Society on November 4, 1913, when the points urged in favour of the novelty were that it possessed erect, wiry stems, stout calyx and bright colour combined with a free-flowering habit.

War Items.—Professor G. F. Scott-Elliot has been appointed a Lieutenant in the newly-raised 7th Battalion of the King's Own Scottish Borderers (Territorials). Professor Scott-Elliot was formerly in the same regiment, and has lately been actively engaged in recruiting for Lord Kitchener's Army and other branches of the service.

—— Having read in the *Gardeners' Chronicle* for November 14 that nothing has been heard of M. Jacob-Makoy at Liége, I take the liberty of enclosing some information (see p. 329) which may be interesting, and I have written it in French. In regard to M. Jules Closon, I may say that I have known this gentleman for several years, and being on a motor trip with my family, and passing Liége about a fortnight before war was declared, I had the pleasure of also making the acquaintance of his family. When their town was assaulted by German hordes I invited him to send two of his daughters, and they have been here since the beginning of September. We now and then hear from the family, but it is very difficult to get letters over the frontier. Horticulturists in Holland appreciate very much what you are doing for our French and Belgian friends in horticulture by printing a part of your journal in French. *B. Ruys, Royal Moerheim Nurseries, Dedemsvaart, Holland.*

—— In our issue of October 10 (p. 252) we gave some particulars of the collection organised by salesmen and others engaged in Covent Garden Market in aid of the Prince of Wales's and Belgian Relief Funds. A most businesslike report is now submitted by Mr. H. J. Gay, who has acted as secretary. This document shows that the collection is now closed, and the gratifying result is the substantial sum of £1,017 3s 6d., which has been allocated as follows :—To the Prince of Wales's Fund, £447 8s. 9d.; to the War Refugees' Committee, Aldwych, £447 8s. 9d.; and to a special Belgian Relief Fund organised by Mr. Hastings Pimbury, 199, Piccadilly, £122 6s.

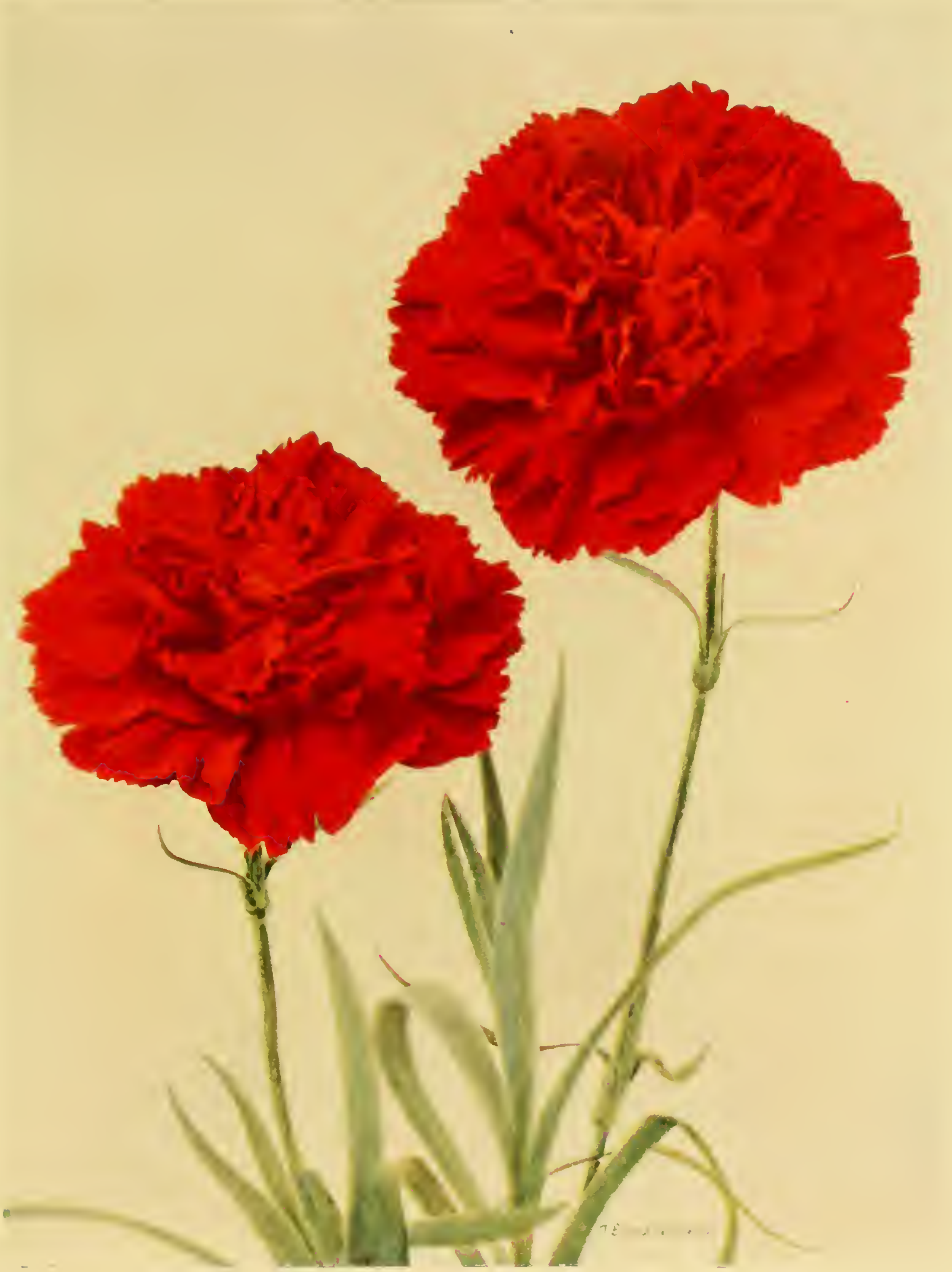
—— The sum of £27 10s. 3d. has been forwarded to the Belgian Relief Fund by Messrs. W. Wells and Co., Merstham, as the result of collections and the sale of flowers at recent shows. The sum was made up as follows :—Subscriptions, £8; flowers sold at shows, £4 6s. 3d.; flowers sold at shows where the money was handed to the committees of the societies, £7 2s. 9d.; and £8 1s. 3d. collected in a box in the firm's Chrysanthemum show house.

—— Messrs. Stuart and Bird, the indoor and outside foremen under Mr. W. Hutchinson at Terregles, Dumfries, have rejoined the

---

* *Journal of Agricultural Science* (vi., September 3, 1914).

Supplement to the "Gardeners' Chronicle."



CARNATION "WELLS' CHAMPION."

Lanarkshire Yeomanry and Mr. BIRD the new Territorial battalion of the King's Own Scottish Borderers now being recruited at Dumfries.

—— There has been a splendid response to Lord Kitchener's appeal from all classes of gardeners. Would it not be possible to produce a battalion of gardeners recruited from the gardening profession only? This would be an honour to hand down to our children in years to come. As a class, gardeners are strong and hardy, and would fulfil all the duties required of them. I still believe that there are thousands who would join such a battalion should the authorities think proper to give their consent. Would it not be possible also to officer the battalion from head gardeners, nurserymen, or foremen? *C. R.*

—— A Chrysanthemum show was held in the Public Hall, Stevenage, on the 20th ult., with the object of raising funds to purchase presents for the men of the Hertfordshire Regiment at the front. The show was a great success, and resulted in a profit of £53. Mr. C. F. CORBOULD-ELLIS undertook the duties of hon. secretary and treasurer, the Rev. C. P. H. REYNOLDS officiated as chairman of the committee, and Mr. CLARENCE ELLIOTT, nurseryman, who first suggested the holding of the show, was vice-chairman. Mr. REYNOLDS sold gifts by public auction in aid of the fund. A rock garden was presented by Mr. CLARENCE ELLIOTT, who promised to arrange it in the garden of the purchaser free of charge.

—— Admiral Lord CHARLES BERESFORD asks us to publish the following particulars respecting the operations of the Vegetable Products Committee :—"With the recognition and support of the Admiralty and War Office, the Vegetable Products Committee has been formed with the following objects :—(1) To collect and deliver fresh fruit and vegetables, jams, preserves, etc., supplied free of cost, to warships in accessible stations, Army camps and depots, hospitals and other institutions ; and (2) to assist in the organisation of fruit and vegetable industries. The first and immediate purpose of the committee, which is a purely voluntary body, is to supply our warships, the crews of which get neither fresh nor preserved fruits, except what they pay for out of their own pockets. They cannot well afford to do this, and even if they could it is practically impossible while they are at sea. The value of fruit and vegetables to sailors on protracted active service is inestimable. The committee's scheme has the approval of the Admiralty and War Office, and a telegram has been received from Admiral Sir JOHN JELLICOE, in which he says : 'Fruit would be greatly appreciated by the men, and I hope it may be possible to arrange with the Admiralty for its delivery.' The Vegetable Products Committee hopes that public financial support will enable it not only to make its work of notable value to the Services, but also in the organisation and development (through its country branches which are now being formed) of the fruit and vegetable industries. In this direction it expects to be able to assist the refugees in this country by utilising the services of such of them as are skilled gardeners, but in no instance will any such employment be encouraged in cases where it may result in the displacement of home labour. This will be left to the judgment of the branch committees, whose policy in this matter will be guided by local conditions. Donations to the committee's funds should be sent to the treasurers, Messrs. JACKSON, PIXLEY AND COMPANY, chartered accountants, 58, Coleman Street, London, E.C. All gifts of fruit, vegetables, jams and preserved fruits should be addressed, 'Vegetable Products Committee,' Salvage Warehouse, Paddington Goods Station, London. Only fruit and vegetables in first-class condition, and most carefully packed, should be sent. All gifts should be sent by goods train and marked 'at owner's risk,' thus securing lowest railway carriage rates. In every case a postcard should be sent to the committee's office address, advising the dispatch of each consignment. The following fruits and vegetables are required :—Fruit : Apples, Pears, Walnuts and Quinces. Vegetables : Potatos, Onions, Carrots, Beets, Turnips, and Parsnips. Onions are particularly recommended. Potatos, Turnips and Onions may be sent in sacks, but all other vegetables (and fruits) should be packed in boxes, barrels or crates. Green vegetables will all be accepted (separately packed) for the supply of hospitals and Army camps. The name and address of the sender should be stated on the outside wrapper, or on a tie-on label, of each package, together with the class and approximate quantity of each parcel's contents. The committee sent its first consignment to the fleet on October 14. By November 14 upwards of 2,000 large cases, barrels, etc., of gifts of fruit, vegetables, jams and preserved fruits had been received at the committee's central distributing depot at Paddington. Almost the whole of this quantity was immediately despatched to His Majesty's warships in the North Sea. This was exclusive of several packages of vegetables, etc., to Army camps and hospitals. Jams and preserved fruits (which the committee is most anxious to collect for vessels such as submarines, torpedo boats and minesweeping trawlers, which have no canteen and very limited storage space for fresh fruit and vegetables), are being stored in the depot until the fresh fruit supply slackens. Many country committees are being formed to make jam for supplying the fleet and hospitals later on. If the committee were in a position to pay railway carriage on gifts of fruit, etc., sent to its central depot, it is believed that the present supply to the fleet would be more than quadrupled. Funds are urgently invited for this purpose, and also for carrying out the committee's general objects."

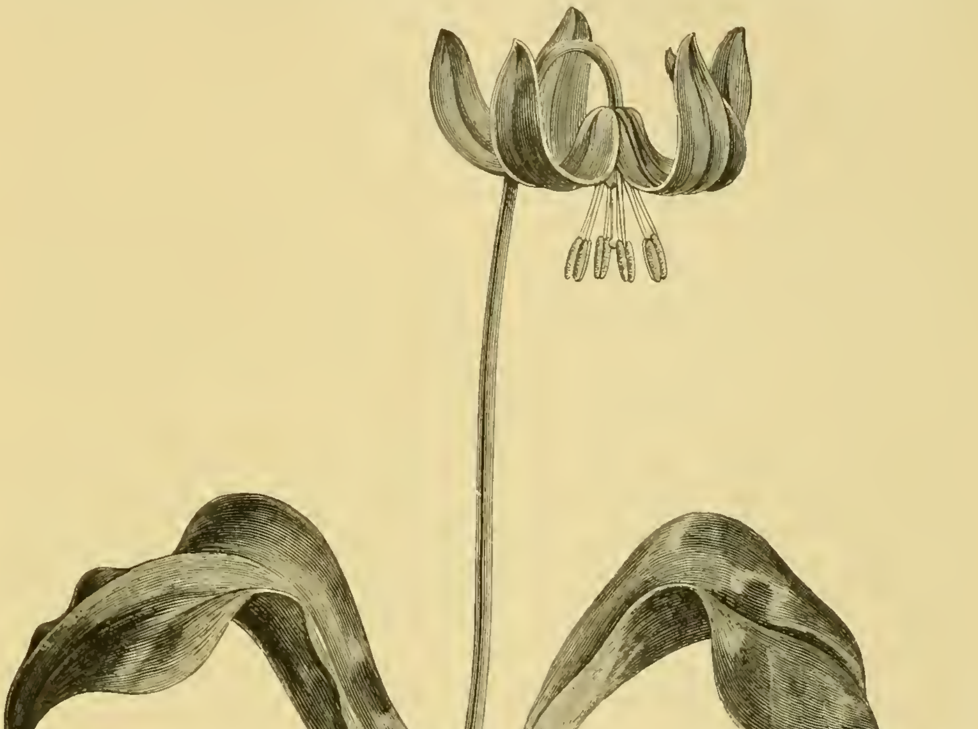


FIG. 139.—ERYTHRONIUM HENDERSONII : FLOWERS LILAC WITH A CENTRAL PURPLE BLOTCH EDGED WITH YELLOW.

(See "Week's Work," p. 368.)

SUBSIDIES FOR SEED GROWERS.—Germany and France have hitherto been the principal sources of supply for seeds of root and garden crops, and as the war in Europe will necessarily cut off the supply from these countries, the Canadian Government has adopted a policy of paying cash subsidies for seeds produced in the Dominion. For the seed of Mangold and Sugar Beet the subsidy will be 3 cents per lb. ; Turnip, 4 cents ; Carrots, 7 cents ; garden Beets, 10 cents ; Parsnips, 7 cents ; Radish, 9 cents ; Cabbage, 25 cents ; Tomato, 50 cents ; Onions, 25 cents ; Celery, 40 cents ; Lettuce, 20 cents ; Cucumbers, 20 cents ; Water Melon, 20 cents ; Musk Melon, 30 cents. *Agricultural Gazette.*

NATIONAL ROSE SOCIETY.—The thirty-eighth annual general meeting of the National Rose Society will take place at the Connaught Rooms, Kingsway, on Thursday, the 10th inst., at 2 p.m. A conversazione will be held from 4.30

to 6.30 p.m. Lantern slides of Roses will be exhibited, and a selection of music will be given under the direction of the hon. treasurer, Mr. G. W. Cook.

The Surveyors' Institution.—The next ordinary general meeting of the Surveyors' Institution will be held in the Lecture Hall of the Institution on Monday, the 14th inst., at 8 p.m., when short papers will be delivered by Mr. Andrew Young and Mr. L. O. Mathews on "The report of the Land Enquiry Committee on the Acquisition of Land."

Chrysanthemum Conference.—The National Chrysanthemum Society will hold a conference on Single Chrysanthemums at the Essex Hall, Essex Street, Strand, W.C., on Wednesday, the 9th inst., at 7 p.m. Papers will be read by Mr. M. E. Mills, Mr. T. Stevenson, and Mr. P. A. Cragg (illustrated by limelight views). The president, Sir Albert Rollit, LL.D., D.C.L., will occupy the chair.

Mr. E. M. Holmes.—We understand that Mr. E. M. Holmes, who has been for forty-one years Curator of the Museum of the Pharmaceutical Society, is now enjoying well-earned leisure. Mr. Holmes is well known in horticultural circles as a leading authority on medicinal and cryptogamic plants. He has for many years been a member of the R.H.S. Scientific Committee, and has taken a considerable interest in the fungous and insect diseases of plants. At his home, Ruthven, Sevenoaks, he will now have time to undertake work for merchants bearing on drugs, new plant and vegetable products from abroad, impurities and adulteration of drugs, vegetable poisons, and other matters requiring expert botanical knowledge.

The Victoria Medal of Honour.—The Rev. W. Wilks writes as follows: In 1897, with the gracious assent of her Majesty the late Queen Victoria, in perpetual remembrance of her Majesty's glorious reign, and to enable the Council to confer conspicuous honour on those British horticulturists resident in the United Kingdom whom it might from time to time consider deserving of special honour at the hands of the Society, a gold medal was established, which is known as the Victoria Medal of Honour. There are but sixty-three medals, representing the full number of the years of her Majesty's reign. Vacancies having occurred in the list during 1914 the Council have conferred the distinction upon the following:—(1) Captain W. Stackhouse C. Pinwill, a Cornish amateur who has all his life collected rare plants and has been most liberal in distributing them gratuitously far and near; (2) Mr. Joseph Cheal, of Crawley; (3) Mr. Whytock, gardener to the Duke of Buccleuch at Dalkeith; (4) Mr. Wm. Cuthbertson, of Messrs. Dobbie of Edinburgh.

Tea.—In view of the attention which Tea is receiving just now on account of the war the following figures from the *Home and Colonial Mail,* showing the amount of Tea consumed in this country in 1913-14, are of interest:—In the twelve months 318,830,000 lbs. of Tea were consumed in this country, of which 180,037,000 lbs. came from India, 94,545,000 lbs. from Ceylon, 13,786,000 lbs. from China, and 30,459,000 lbs. from other countries, chiefly Java. In the twelve months the consumption of British-grown Tea increased by 12,800,000 lbs. and that of China Tea by 4,900,000 lbs.

The Root Crops.—According to returns issued by the Board of Agriculture and Fisheries, the total production of Potatos in England and Wales amounts to 2,955,299 tons, or some 60,000 tons more than last year; while the yield per acre, although slightly less than in 1913, is about a quarter of a ton above the average. Turnips and Swedes have given a yield considerably better than in 1913, but rather below the ten-year average. The yield of Mangolds, on the other hand, is only slightly above that of 1913, and a ton below the average. Both kinds of roots are, speaking generally, above the average in most of the western counties, and below the mean, sometimes considerably so, in the eastern half of England. The total production of Turnips, Swedes and Mangolds in England and Wales is some 960,000 tons greater than last year.

Apple Trains in the West.—The importance of the Apple crop in the United States is seen in a note in *American Fruits,* describing the care with which the fruit is despatched by rail. Fruit has the freight right of way on all railroads, and is sent in refrigerator cars, some of the trains measuring half a mile in length. Conductors on the fruit trains carry thermometers and special regulations are enforced. When the temperature exceeds 34° ice is placed in the refrigerators, and when there is a danger of the fruit freezing the cars are equipped with oil heaters that can be reached from outside the car.

The "Epaulette" Bouquet.—The "epaulette" bouquet hails from America, where we learn from the *Florists' Exchange* that it has originated because of the military spirit abroad. Just as epaulettes are made of various forms and materials, according to the rank of the wearer, so are there many different ways in which the epaulette bouquet can be arranged. Being worn on the shoulder, it must be flat on the under-surface, and it is seldom more than 4 inches long. There is no lacette, simply the required foliage for the foundation. One is described which had a small red Rose at the top, then a cluster of Lily-of-the-Valley, finished with Violets. No ribbon is attached, nor is tinfoil used.

Planting at the Panama Pacific International Exposition.—Nearly a million flowering plants have been set in the main entrance plaza, and in the minor courts of Palms and flowers, the work being done during the last three weeks in October. All of them are of yellow-flowered kinds, and include Wallflowers, Spanish Irises, Pansies, Daffodils, and Golden Poppies. The Court of Palms has been filled with Acacias, tall Cypresses, and Eugenias.

Antirrhinum Rust in America.—The rust disease of Antirrhinums, caused by the fungus Puxinia antirrbini, is spreading very rapidly in some parts of the United States of America, and numbers of growers in the vicinity of Chicago have been compelled to give up the cultivation of the flower on account of the disease. Apparently the rust is new to America, for it is stated that it has only been reported but once in the United States prior to 1913. Mr. C. C. Rees, of Illinois University, is conducting an investigation of the rust, with a view to helping growers. The Antirrhinum is cultivated very extensively in the States, where the flowers are known as "Snaps."

School-Gardens Competitions in Oxfordshire.—The excellent work done by county instructors in horticulture deserves wider recognition than it generally receives. As an example of the value of this work, the report of Mr. S. Heaton, staff instructor for Oxfordshire, may be cited. In the course of the past season exhibits of garden produce were staged by 110 schools in the county, and the total number of exhibits was 1,602. There can be no question but that these competitions awaken and foster a love of and skill in gardening, and Mr. Heaton is to be congratulated on the energy which he has displayed in encouraging them in Oxfordshire.

Sulphur as a Fertiliser.—The vexed question as to the value of sulphur as a stimulator of plant growth has been examined by Mr. F. de Castella (*Journ. of Agric. Dept. Victoria,* 12, p. 289, 1914). This observer finds that the use of sulphur in vineyards results in a considerable increase in the yield of Grapes. He concludes, moreover, that the value of sulphur as a fertiliser is in direct proportion with the amount of organic matter in the soil. As the amount of organic matter diminishes so the stimulating effect of sulphur decreases, and if no organic matter be present the addition of sulphur is without effect on plant growth. Mr. F. de Castella finds also that the effect of sulphur is most marked when it is previously mixed with the organic matter to be added to the soil.

Insecticidal Value of Liquid Extract of Larkspur Seed.—A note in the *Pharmaceutical Journal* (November 14, 1914) draws attention to the observations of Mr. J. B. Williams (see *American Journ. Pharm.,* September, 1914) on the insecticidal value of the liquid extracted from Larkspur (Delphinium ajacis L.). The insecticidal value is shown to be due to the oil contained in the extract; whence it follows that the most potent preparation is to be obtained by the use of a solvent which dissolves the largest quantity of oil. The following procedure has been found to give the maximum of insecticidal oil:—Extract with petroleum benzine; evaporate in a water bath, and dissolve the residue in 95 per cent. alcohol.

The Highland Kelp Industry and the Potash Supply.—In view of the reduction in the supply of potash, the production of kelp, derived from burning seaweeds, is likely to receive increased attention. Kelp-making was at one time very profitable, but the industry declined greatly as only low prices were obtained when potash was imported from Germany. The districts where kelp is at present produced are limited, but might be added to easily. It is estimated that North and South Uist and Benbecula, the leading parts of the Highlands where kelp is burnt, produced last season, which was a favourable one, from 1,100 to 1,250 tons of ash, valued at from £4,300 to £5,000. It is considered that there are other districts which would yield large returns if the industry were developed.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

National Diploma in Horticulture.—Gardeners are reminded that in 1913 a Professional Diploma was established with the consent of His Majesty's Government, and as the outcome of an arrangement with the Board of Agriculture. Under such arrangement the Diploma was to be (a) styled "National," (b) strictly confined to the members of the gardening profession, and (c) secured by examinations of both a practical and theoretical nature. Among those for whose benefit the Diploma was established are the following:—Florists, fruit growers, gardeners, horticultural inspectors, horticultural instructors, landscape gardeners, market gardeners, nurserymen, public park gardeners, and seedsmen. The first preliminary examination was held in June of this year, when over 60 candidates presented themselves. A large proportion of these have already entered their names for the first final examination to be held in June, 1915, when also there will be a further preliminary examination. Winter affords to gardeners the time for study which the longer days of spring and summer deny them. Their attention is therefore particularly called to the opportunity of the present months and the distinction which the Diploma confers as the highest evidence of proficiency in the craft. It will undoubtedly become more and more recognised by employers as an indication of the ability of those who hold it as years pass along. It raises the rank of the gardener in the professions—a point of great value. Candidates can register themselves for the examinations after they have attained the age of 19. The preliminary examination can be taken after the age of 21 is reached, not less than four years having been spent in the practice of horticulture. The final examination is open to those who have passed the preliminary examination and have spent not less than six years in horticulture. Young gardeners particularly are urged to consider the desirability of registering themselves and of applying themselves to the necessary practical and theoretical work forthwith. From the testimony of the candidates of June last it is abundantly evident that the effort involved proved of great value to them. The examinations are not only a stimulus, but preparation for them necessitates definite work upon systematised lines, according to the candidate's sphere in the profession. Forms of application for registration, with a syllabus of the examinations, can be had from the secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W. *W. Wilks, Secretary.*

Black Spot in Roses (see p. 333).—There are one or two other methods than those mentioned that might be used for stopping the ravages of the black spot in Rose leaves. (1) Steam could easily be applied in spray form through a pipe 3 feet long or more, so as to avoid the stooping necessary with a plumber's blowpipe lamp, or a hot-water solution of potassium sulphide above 140° F., at which temperature albuminous matter coagulates. (This process should be done from November to February, whilst the rootlets are dormant.) (2) A layer of quicklime in powder placed on the soil at the time the winter spores germinate in spring. These two methods would only be applicable to prevent such spores as are in the soil from infecting the leaves, but even if the soil were sterilised, still the summer spores might be conveyed from gardens at a distance, and therefore the disease must also be met with on the leaves. For this purpose the best treatment would probably be spraying with a solution of formaldehyde, or with a solution of potassium sulphide, the latter followed by a dusting of flower of sulphur. Roses require a fairly heavy soil, and plenty of light and air, and if they are crowded in nurseries on a light soil, with insufficient food and very little sun, any of the diseases to which Roses are subject may be expected. My White Maman Cochet and my Lyon Roses have not yet suffered from black spot, so that the suggestions I offer are not founded on experience, but are offered with all humility to those who have the opportunity of experimenting on diseased plants. As a chemist I know that formaldehyde, sulphur, sulphide of potassium, and carbolic acid are inimical to the growth of fungi, and as a botanist and horticulturist I have found that all plants have certain laws regulating their health, which differ for each one, and must be studied and followed if health and vigour are to be maintained. I cannot say that I believe in "disease-proof" plants; some strains or races may be indifferent to circumstances that affect others, but given conditions that are not natural, or outside the laws regulating the health of the apparently disease-proof plant, disease will surely follow. *E. M. Holmes.*

Abnormal Flowering.—On November 20, I noticed a bush of the Mezereon (Daphne Mezereum) with a few expanded blossoms in a cottage garden in the parish of Winscombe, Somerset. On a bank elsewhere are several fine plants of the common Mullein (Verbascum Thapsus), two of which have well-developed spikes covered with flower-buds. Berries of many kinds, and especially Holly, seem particularly abundant in the Mendip district. Numerous Blackberries remain on the bushes, some of the fruit not having been spoilt by rains or frost. *H. S. Thompson.*

The Cultivation of Medicinal Plants.—In his interesting article on this subject (*Gard. Chron.*, Nov. 28, p. 348), Mr. Wilfrid Evans alludes to the use of anaesthetic drugs of the Middle Ages. The fact is that they are now found near monasteries and villages (as the Celaudine) because they were cultivated. For example, certain drugs were used for anaesthetic purposes for surgical operations up to (as far as has been discovered) the fifteenth century. This use of the Belladonna and its ally the Mandrake has descended from Pliny's time (first half of the first century A.D.), who wrote of the latter plant:—"The juice has a narcotic effect, and is given before incisions or punctures are made in the body in order to insure insensibility to the pain." Of the former, he says it "has the effect of dilating the pupil; hence the eye is associated with it before the operation of couching." It is this property which induced the ladies of S. Europe to apply it to their eyes, so suggesting the name—*bella donna.* We still retain the old English name of Dwale, derived from a drug so called. In my transcripts of recipes of the fourteenth century (*Medical Werkes of Ye Fourteenye Centurye*) will be found a recipe as follows:—"R. For to maken a drynke that men call dwale, to make a man slep-en whyles men kerue ['cut'; hence 'carve'] hym.—iii sponful of the Ius of humloke and iii of the wylde nep [Bryony], iii of letus, iii of pope [i.e., Poppy, opium], iii of henbane, and iii of cyselle [vinegar]. Do ther-of iii sponful into a pottle of good wyne or good ale and meddle [mix] hem [them] wel togedere; and thanne [then] let hym that schal ben curuen [cut] drinke ther-of till he falle on slepe," etc. The true Mandrake (Atropa mandragora) not being British, the native species was used instead. Mr. Evans also alludes to the Henbane. "Smoking the capsules and seeds is a country cure for the toothache." So it was in the fourteenth century, as the following shows. But it was thought that toothache was due to minute worms in the teeth, as is still supposed by the victim in China, but imposed upon by the "dentist," who conceals minute worms under the long nails. "*Pro vermibus in dentibus* [*For worms in teeth*].—R. Take the sed of hennebane . . . . and virgine wax, and recheles [a kind of resin used for incense] and mak a candel ther-of and hold thy mouthe over the candel that the hete and the smoke may come to thy teth, and do so ofte, *et videbis vermes cadere de dentibus tuis* [and you will see the worms falling from your teeth]." The Aconite is not mentioned in the book. The Celandine I have mentioned was used as an ingredient in several drugs. *George Henslow.*

Late Peas.—You may be interested to know that we picked a quart of Autocrat Peas in these gardens to-day (November 26). The pods were fairly well filled, and when shelled there were sufficient Peas to send to the table for two persons. The seeds were sown on July 20, and we have had several good pickings from the plants. I should be very interested to learn of any comparison to this. *A. Payne, Los Altos Gardens, Sandown, Isle of Wight.*

Trading with the Enemy (see p. 355).—There is no doubt but that Dutch firms have for some few years past worked up a very large trade in German-grown Lily-of-the-Valley crowns through Rotterdam. It is surprising that so few British growers have taken up the cultivation of this most beautiful plant on a commercial basis! Those that have done so to any considerable extent may be counted on the fingers of one hand. I know of only four growers of forcing crowns, and their plants give far superior spikes and bells than can be obtained from the general first quality imported crowns. Would it not be worth while for home-growers to embark more largely in the cultivation of Lily-of-the-Valley and thus give employment in a profitable undertaking? We can grow better crowns in this country than those imported, provided they are given proper attention, and they repay the grower handsomely. *Hortus.*

A Selection of Apples.—Mr. Weston on p. 353 gives a selection of Apples for planting with the remark that the private grower who has to maintain a succession of fruits over a long period should plant a considerable number of varieties. He then proceeds to give as many as twenty-nine culinary sorts and twenty-seven dessert varieties—a total of fifty-six varieties. He says it is sound advice for the market-grower to limit his varieties. Why then is it not equally sound advice for the private grower to limit his sorts reasonably and grow more trees of the most desirable varieties? Because no better late Apples can be found than Bramley's Seedling, Dumelow's Seedling (Wellington) and Newton Wonder, with Lane's Prince Albert to precede them. In addition to these four incomparable varieties he gives the names of nine more culinary sorts, not one of which can be compared in point of quality with the four noted. With the early varieties he names five, when two, or at the most three, would supply fruit in abundance. Mr. Weston makes the curious error of omitting the finest of all early kitchen Apples—Grenadier. There is not the slightest doubt but that this is the best of all early kitchen Apples for any soil. It produces large fruits quicker than any other Apple, and they may be rendered immune from scab under quite ordinary treatment. Nine mid-season sorts are also given, an excess of five, certainly. In the dessert section he is equally unhappy. Who would wish to grow so many as four early, twelve mid-season, and twelve late sorts? Many of them are deficient in flavour. In the mid-season section James Grieve, Charles Ross, Rival, Lady Sudeley, and Worcester Pearmain surely are ample to maintain a good supply. For a late supply, what better variety could be planted than Cox's Orange Pippin? Why not plant this fine Apple in quantity, for none is equal to it, and the fruits can be kept until February? Moreover, where this variety succeeds it crops annually. The same might be said of some few others in the dessert selection. Many varieties recommended by Mr. Weston are very liable to canker. *E. Molyneux.*

The Banding of Fruit Trees (see pp. 266, 299).—I am surprised that there has not been more correspondence on this subject, as there are one or two important points that should be noted. (1) It is not mentioned whether the experiments were restricted to standard trees only or standard and bush trees. The former may be presumed because most moths were caught on bands 5 and 6 feet off the ground. To those who have most bush trees it is some comfort to know that the base bands were the next most useful. But if it requires other bands at intervals to make success assured, how are we to manage to place them on matured bush-trees with so many growths? Even if possible to do, it is certainly improbable that the average gardener can find time to do the work. (2) Mr. Barker states that 10-inch-wide bands were the narrowest effectual. This statement means that the theory and advised practices of writers of former years wherein they advocated 7-inch bands falls to the ground. (There is at least one well-known firm that sells 7-inch bands for the purpose.) It also nullifies the use of putting bands on dwarf trees where there is less than 10 inches between the first branch and the ground level, and there are a number of such trees in every fruit plantation. May I add in conclusion that Mr. Kay Robinson states that the success of banding trees can be only partially successful because the female moths are frequently carried up into the tree by the males? *C. Turner, Ken View Garden, Highgate.*

Gardens Old and New.—On the 12th ult. I attended an interesting lecture at the meeting of the Cardiff Naturalists' Society, given by Mr. Avray Tipping. The title of the lecture was "Gardens Old and New"—a subject redolent of the peace of quiet lawns and fair flowers, and a welcome relief from the warfare with which our thoughts are at present occupied. Mr. Tipping confined his attention chiefly to the subject of the formal garden, as this particular kind lends itself best to reproduction by photography, and is therefore easiest to illustrate. He said that modern architects were beginning to pay more attention than formerly to the relationship between the garden and the house, and this tended to bring the formal garden into prominence. It was not, however, a recent invention; it was, in fact, one of the oldest features of social life, specimens of such gardens being found in ancient Egypt, in Babylonia, and in ancient Rome. Pliny the younger wrote a good deal about them, and as his writings were preserved in British monastic establishments, his ideas had a considerable effect upon the monastic gardening of the Middle Ages. It is evident that interesting gardens existed in the eleventh century, as we are told that William Rufus, desiring to see his niece, who was in the convent at Romsey Abbey, made the excuse to the abbess that he wished to inspect the gardens of Roses and flowering shrubs. In the Court accounts of the reign of Henry III. there are to be found items of garden expenditure, such as the purchase of materials for walls and terraces. Chaucer's delight in gardens is well known. Probably when he described the garden in Athens where the imprisoned Palamon and Arcite gazed from the window at the beautiful Emely, he had in mind the garden at Windsor Castle. In the sixteenth century gardens were still formal and enclosed. At Thornbury there was a formal garden which still retains the chief features which it possessed in 1521, when it was planned by the Duke of Buckingham. It was described by Henry VIII. and was quite recognisable. At Hampton Court also the sunk garden is still very much as it was when first laid out, after the downfall of Wolsey; the evidence for this lies in a somewhat hasty sketch made by a contemporary Flemish artist. In the reign of Elizabeth gardens on a large scale were becoming commoner; it was a time of prosperity, and many country gentlemen could well afford the planning and upkeep of large grounds. Of this period Montacute was one of the finest examples, the corner turrets and balustrades of the stone work giving a pleasing suggestion of a fortified enclosure. By the reign of James I. the art of gardening had sufficiently developed to produce a recognised literature. There had been earlier writings, but these were for the most part plagiarisms of Continental works. In the seventeenth century Lawson began writing and Bacon produced his famous essay. His useful precept "not to be too busy" might well be followed by modern garden architects, many of whom had too strong a tendency to overload the garden with masses of heavy masonry. James I. himself contributed to the literature of this time a description of the gardens at Windsor Castle, to which reference has already been made as probably forming the original of the gardens in the "Knight's Tale." Wilton (not the present gardens, which were remodelled by "Capability Brown" and Repton) and Eydon Hall, in Northamptonshire, were good examples of seventeenth century gardens on a large scale. Owlpen, at the foot of the Cotswold Hills, was a small manor of the time of Charles I.; the gardens covered only half an acre, but the design and execution were perfect. John Ray had expressed the opinion that half an acre was an ideal size for a garden, and there seemed a tendency in modern days to revive the custom of the small garden, notably on the Riviera. After the Restoration rapid progress was made. A certain amount of Dutch influence was brought over by the restored exiles and the use of canals was introduced, as at Westbury, in Gloucestershire. Other Continental influences were also at work, chiefly French ones. In the reign of Louis XIV. Le Nôtre laid out the beautiful grounds at Versailles in "half-miles," and the idea of extending the garden beyond its own narrow limits to form a landscape found a ready response in England, resulting in schemes like those now to be seen at Badminton, Moor Park, Hertfordshire, and Longleat. In some of these examples only the avenues now remain, but it is evident that there was at that time a revolt against the endless monotony of the series of formal gardens which had hitherto occupied the grounds of the larger mansions. In the writings of contemporary essayists—notably Addison and Pope—we find expressions of this reaction. It was at this time that "Capability Brown" began his revolutionary task of destroying the old canons of gardening and introducing quite a new and informal style. He did not, it was true, advocate a complete "return to nature," but he led the way for Humphrey Repton. Repton was a genius, a passionate lover of nature, as well as an artist of excellent taste and true feeling. It was he who discovered the secret of reconciling the formal and the natural so that the one appeared as the complement of the other, and the present formal garden at Wilton House, which was designed by him, is a perfect example of its kind. In later years his ideas were freely utilised, and at Penshurst, Sussex, Harley Hall, Cheshire, and Sudeley Castle there are fine examples of nineteenth century formal gardens in which his influence is plainly to be seen. The lecturer concluded by touching lightly on the harmony which should exist between the house and the garden, and gave as examples of perfect relationship Athelhampton, Dorsetshire, and several designs by Mr Harold Peto. *Caltha.*

SOCIETIES.

ROYAL HORTICULTURAL.

December 1.—It will be remembered that when military reasons compelled the Society to abandon the special fruit show, the Council issued invitations for fruit to be shown at the fortnightly meeting fixed for December 1. Thus on Tuesday last there were many exhibits of first-class Apples. In addition there was a good exhibit of vegetables shown by the Studley Horticultural College, so that both fruits and vegetables were well represented.

The floral exhibits were mainly Carnations, for, in view of the Perpetual-flowering Carnation Society's Show in the same building on the following day, many exhibitors arranged their exhibits on the Tuesday, and were thus prepared for the double event.

Only one Award was made to a novelty by the Floral Committee, and one by the Orchid Committee.

The Orchid Committee awarded four Medals to groups.

At the three o'clock meeting in the Lecture Room an address on "The Cooking of Leaf Vegetables" was delivered by Mr. C. Herman Senn.

Floral Committee.

Present: H. B. May, Esq. (in the chair), Messrs. E. A. Bowles, G. Reuthe, W. H. Page, J W. Moorman, Chas. E. Shea, John Green, Chas. Dixon, J. T. Bennett-Poë, W. J. Bean, F. W. Harvey, R. Hooper Pearson, Jas. Hudson, E. H. Jenkins, W. G. Baker, Geo. Paul, C. Blick, J. W. Barr, Wm. Howe, J. F. McLeod, J. Jennings, W. Bain, W. Cuthbertson, John Dickson, Arthur Turner, Chas. E. Pearson. W. P. Thomson and R. C. Notcutt.

AWARD OF MERIT.

Chrysanthemum Molly Godfrey.—A single variety of the shade known as bluish lilac [*Repertoire de Couleurs*, No. 183 (2)], with white zone around the prominent gold-coloured disc. The flowers have about four rows of petals, and measure 5½ inches in diameter. Shown by E. Mocatta, Esq., Addlestone (gr. Mr. T. Stevenson).

GENERAL EXHIBITS.

The finest floral exhibit was a group of Begonias shown by Misses Tate and Tanner, Bushey (gr. Mr. F. Streeter). This imposing collection was composed of large, superbly flowered plants, principally of the Gloire de Lorraine type, and was staged with much skill for effect. At the back were three arches, and from these were suspended plants—two of pink and one the white Turnford Hall variety—that were masterpieces in high cultivation. Other choice plants were arranged on tall stands in a bed of dwarfer specimens, and in front were rows of the larger-flowering kinds, such as Clibran's Pink and Miss Clibran. (Gold Medal.)

Messrs. H. B. May and Sons, Edmonton, exhibited, as a floor group, a collection of indoor flowering plants and ferns, for which a Silver Flora Medal was awarded. A plant of the beautiful Polypodium Vidgenii had a conspicuous place in the centre, where its arching fronds showed well in contrast with the bright flowers of Cyclamens and Begonias. At other points of vantage were arranged superb plants of Adiantum micropinnulum, A. Charlottae, A. cardiochloena, Dicksonia glauca and Polypodium Mandaianum, as foils to groups of Ericas, Begonias and Primula obconica.

Mr. C. Engelmann, Saffron Walden, staged the best exhibit of Carnations, for which a Gold Medal was awarded. The flowers were arranged on a table that ran the whole width of the Hall, making it one of the most imposing floral exhibits at the meeting. Most of the choicer varieties in cultivation were included.

Messrs. Allwood Bros., Wivelsfield, showed Carnations of fine quality. Their fine Wivelsfield White variety had the place of honour in the centre, and Mary Allwood, another of this firm's novelties, was shown well. Gorgeous, Cinderella (cerise and heliotrope), and Bishton Wonder, one of the most fragrant of this type of Carnation, are others deserving of notice. (Silver Flora Medal.)

Mr. A. F. Dutton, Iver, Buckinghamshire, arranged varieties of Perpetual-flowering Carnations in baskets, making a pretty and dainty exhibit. Outstanding varieties were Enchantress Supreme, Champion (scarlet), White Wonder, Rosette and Carola. (Silver Banksian Medal.)

Sir Randolf Baker, Bart., Ranston, Blandford (gr. Mr. A. E. Usher), showed Perpetual-flowering Carnations of such popular varieties as Carola, Sunstar (yellow), Mandarin; Benora, a pretty flaked variety; Mary Allwood, Rose Pink Enchantress and Salmon Enchantress. (Silver-gilt Banksian Medal.)

Messrs. W. Cutbush and Son, Highgate, showed Perpetual-flowering Carnations, the varieties White Swan, Mrs. C. F. Raphael and C F. Ward being especially good.

Messrs. Stuart Low and Co., Enfield, filled a table with flowering plants. Their Begonias were very good, and there were striking batches of Crowea latifolia, Cyclamens, Acacias and a representative collection of up-to-date Carnations. (Silver Flora Medal.)

Chrysanthemums were exhibited by Messrs. W. Wells and Co., Ltd., Merstham (Silver Banksian Medal); Messrs. J. Peed and Sons, Norwood; and the Misses Price and Fyfe, East Grinstead.

Mr. L. R. Russell, Richmond, again exhibited berried shrubs, Ivies, and ornamental-leaved shrubbery plants. This nurseryman also exhibited well-flowered Begonias. (Silver Banksian Medal.)

Messrs. Wills and Segar, South Kensington, were awarded a Silver Banksian Medal for an exhibit of Ericas, Cyclamens, and Begonias.

Pans of Alpines were exhibited by Messrs. T S. Ware, Ltd., Feltham; Mr. G. Reuthe, Keston; Mr. Clarence Elliott, Stevenage; and Messrs. Pipers, Bayswater, who also showed dwarf shrubs.

A Silver Banksian Medal was awarded to Messrs. Malby and Son, Woodford, for photographic studies of flowers and plants, many of which were taken specially for the *Gardeners' Chronicle*. In addition, several coloured slides of floral subjects were included, and in some cases the flowers of these were staged for comparison, showing how faithfully the plates represented the originals.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, W. H. White, J. Wilson Potter, F. J. Hanbury, R. G. Thwaites, R A. Rolfe, W. Cobb, F. M. Ogilvie, J. Charlesworth, C. H. Curtis, W. P. Bound, A. Dye, J. E. Shill, W. H. White, S. W. Flory, R. Brooman White, Sir Harry J. Veitch, and Sir Jeremiah Colman, Bart.

AWARDS.

Award of Merit.

Brasso-Cattleya Admiral Jellicoe var. Pink Pearl (*Cattleya Lord Rothschild* × *Brasso-Cattleya Digbyano-Mossiae*). from Messrs. Stuart Low and Co., Jarvisbrook, Sussex. A very delicately-tinted hybrid of good shape. The flower partakes most of the Cattleya parent in shape and substance, Brassavola Digbyana appearing chiefly in the short fringing of the lip. The colour is pale lilac-pink, the disc of the lip primrose-yellow. The original form was shown by Messrs. Armstrong and Brown on November 3 last.

GENERAL EXHIBITS.

His Grace the Duke of Marlborough, Blenheim Palace (gr. Mr. Hunter), sent Brasso-Cattleya Ida (B.C. Pluto × C. Dowiana aurea). A very distinct hybrid with sepals and petals having a greenish-white ground mottled with rose. Lip well expanded, white, densely spotted and veined with rose-purple, and slightly fringed.

J. Gurney Fowler, Esq., Brackenhurst, Tunbridge Wells (gr. Mr. J. Davis), showed Cattleya Venus Brackenhurst variety (Iris × Dowiana aurea), a large coppery-yellow flower with bright ruby-red lip. C. Ballantineana (Trianae × Warscewiczii), of good colour; Laelio-Cattleya Ilione (L.-C. Dominiana × C. Bowringiana), a good form of the pretty winter-flowering hybrid raised by Messrs. Veitch and bloomed in 1901, and a clear white Cattleya raised between C. labiata Purity and C. Gaskelliana alba.

Messrs. Charlesworth and Co., Haywards Heath, were awarded a Silver Flora Medal for a group of good hybrids, in which Laelio-Cattleya Bella alba had a spike of five flowers; L.-C. Britannia alba had clear white sepals and petals, and other good Cattleyas and Laelio-Cattleyas were included. Also a selection of Miltonia seedlings of the Bleuana section; various good Cypripediums, two distinct forms of Odontioda Brewii; some pretty Odontoglossums, and Oncidioda Cooksoniae.

Messrs. Sander and Sons, St. Albans, staged a group for which a Silver Flora Medal was given, and which included several novelties, the best being Laelio-Cattleya primulina (C. fulvescens × L.-C. Hon. Mrs. Astor), pale yellow with red-veined lip; L.-C. General Allenby (L.-C. Lucasiana × C. Fabia), of good shape and bright rose-purple colour; L.-C. Sir Douglas Haig (L.-C. Henry Greenwood × C. Octave Doin), a grand blush-white flower with rich purple front to the lip; Cattleya General Pulteney (Octave Doin × Trianae), and some good Cypripediums. Among species, Houlletia Sanderi, Coelogyne Mooreana, Oncidium anthocrene, and various Bulbophyllums were noted.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for an effective group of Cattleyas, Laelio-Cattleyas, Vanda Sanderiana, and V. coerulea. Specially noteworthy were the white Dendrobium Phalaenopsis hololeuca; Sophro-Cattleya Doris, dark scarlet; and Sophro-Laelio-Cattleya Lycia (L.-C. Cranstounae × S. grandiflora).

Messrs. J. and A. McBean, Cooksbridge, were awarded a Silver Banksian Medal for a group in which specially attractive were Sophro-Cattleya Pearl (S.-C. Doris × C. Portia), of good shape and rich colour; Laelio-Cattleya Autodoin, Cattleya Fabia in variety, a distinct C. Hardyana, home-raised; Odontioda Charlesworthii and O. Diana; two fine forms of Odontoglossum crispum, and a selection of Cypripediums.

Messrs. Flory and Black, Slough, showed the fine Cypripedium Thalia Veitch's variety, C. Germaine Opoix, and a fine form of C. Idina, a Harefield Hall cross, with darker spotting and clearer background colour than the parent.

Messrs. E. H. Davidson and Co., Orchid Dene, Twyford, sent the clear white Odontoglossum eximium xanthotes; a very large and finely-marked unnamed hybrid; the white Brasso-Cattleya Queen Alexandra, and Cattleya O'Brieniana alba, with six flowers on the spike.

Messrs. Hassall and Co., Southgate, showed Cattleya Moira rubra (Mantinii × Fabia), of fine colour; C. Beatrice majestica (Minucia × aurea), a very good form of Cattleya Dowiana aurea raised from seeds at Southgate; Cypripedium Eve, with a very fine white dorsal sepal; C. Minos Youngii, C. Thalia Mrs. Francis Wellesley, and C. Germaine Opoix.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), Messrs. J. Cheal, Geo. Woodward, Edwin Beckett, W. Pope, A. Grubb, A. R. Allan, Henry Hooper, H. J. Wright, J. Davis, W. Crump, J. G. Weston, A. Bullock, E. Bunyard, P. C. M. Veitch, Owen Thomas and W. Poupart.

Messrs. G. Bunyard and Co., Ltd., Maidstone, showed 100 varieties of Apples and Pears, all of superb quality, the fruits being classed into three sections, according to their season—(1) December to January; (2) February to March; (3) April to May. Taking them in their order, the following are selections:—(1) Rival, Wismer's Dessert, Allington Pippin, Cox's Orange Pippin, Braddick's Nonpareil, Cockle's Pippin, Calville Rouge Precôce, Bellinora (a late Blenheim Pippin), Lane's Prince Albert; (2) King of Tompkins County, Scarlet Nonpareil, Barnack Beauty, Norman's Pippin, Gabalva, Adams's Pearmain; (3) Beauty of Stoke, Reinette de Canada, Boston Russet, Lord Hindlip, Lord Burghley, Cornish Aromatic, Smart's Prince Arthur, Baddow Pippin and Wagener. (Gold Medal.)

Messrs. H. Cannell and Sons, Eynsford, had a magnificent exhibit of hardy fruits, comprising some 200 distinct varieties. Especially good were Apples Beauty of Stoke, Hambling's Seedling, Hoary Morning, Bedfordshire Foundling, Smart's Prince Arthur, Adams's Pearmain, Emperor Alexander and Baumann's Red Reinette. Amongst the Pears were noticed the attractive market variety Late Orange and the excellent Dr. Theil, the latter heavily flushed with red on one side. (Small Silver Cup.)

The finest exhibit of Apples and Pears contributed by an amateur was shown by J. A. Nix, Esq., Tilgate, Crawley. It was a worthy effort on a notable occasion, for amongst the many collections of hardy fruits none was superior. Such Apples as Cornish Gilliflower, Adams's Pearmain, King of Tompkins County, Bowhill Pippin, Chelmsford Wonder, Mère de Ménage, Royal Jubilee, Cornish Aromatic, Christmas Pearmain and Egremont Russet were in the finest condition, and Pears were equally good. (Gold Medal.)

Messrs. J. Cheal and Sons, Crawley, showed highly-coloured Apples all free from blemish, and staged with excellent effect. They featured their new variety, Crawley Beauty, and the fine late culinary sort Encore. Annie Elizabeth, Lord Derby, The Houblon, Gascoyne's Scarlet Seedling, Newton Wonder, Royal Jubilee and Beauty of Stoke are a few that were shown in especially fine condition. (Silver-gilt Banksian Medal.)

The Marquis of Harrington, Elvaston Castle, Derby (gr. Mr. J. H. Goodacre), exhibited choice Grapes, Apples, and Pears. The Grapes were model bunches, not over-large in size, but of superb finish. The varieties included Chasselas Napoleon, Appley Towers, Muscat of Alexandria, and Black Alicante. The Apples and Pears were of the same high quality. (Small Silver Cup.)

The exhibit of Apples shown by C. L. Gordon, Esq., Threave, Castle Douglas (gr. Mr. James Duff), was of special interet as showing how well Apples can be grown in Scotland. These splendid fruits were very highly coloured, and equal in other respects to those from warmer districts. Rival, Chas. Ross, Wagener, Christmas Pearmain, Cox's Pomona, Bismarck, and Emperor Alexander are varieties shown especially well. (Silver-gilt Banksian Medal.)

The Marquis of Ripon, Coombe Court, Kingston Hill (gr. Mr. Thomas Smith), showed about thirty dishes of Apples, notable varieties being Dutch Codlin, Cellini, Alfriston, Bismarck, The Queen, Gascoyne's Scarlet Seedling, Emperor Alexander, and Annie Elizabeth. (Silver Knightian Medal.)

Collections of Apples and Pears were also exhibited by F. J. B. Wingfield, Esq., Sherborne Castle (gr. Mr. T. Turton) (Silver-gilt Knightian Medal); Messrs. W. Seabrook and Sons, Chelmsford (Silver Knightian Medal); Barnham Nurseries, Sussex (Silver-gilt Knightian Medal); Mr. Chas. Turner, Slough (Silver Knightian Medal); Sir Montague Turner, Havering, Essex (gr. Mr. A. Humphrey) (Silver Knightian Medal); Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. E. Beckett) (Silver-gilt Knightian Medal); J. F. Charlesworth, Esq., Nutfield Court, Redhill (gr. Mr. T. W. Herbert) (Silver Knightian Medal); W. Peters, Esq., Leatherhead (Bronze Knightian Medal); Sir Randolf Baker, Bart., Blandford (gr. Mr. A. E. Usher) (Silver Knightian Medal); Messrs. R. Veitch and Son, Exeter (Silver-gilt Knightian Medal); and Capt. Reid, The Elms, Yalding, Kent. (Silver-gilt Banksian Medal.)

Studley Horticultural College, Warwickshire, exhibited a collection of vegetables. The root vegetables were deserving of special praise, for seldom do we see finer quality Carrots, Parsnips, Beets or Potatos at exhibitions. Onions also were uncommonly good. (Silver-gilt Knightian Medal.)

Messrs. Dobbie and Co., Edinburgh, exhibited varieties of Potatos that have proved, under trial, to be resistant to wart disease caused by the fungus Synchytrium endobioticum. They were as follows: Snowdrop, The Provost, Peacemaker, White City, Burnhouse Beauty, Climax, Abundance, The Crofter, King George, Golden Wonder, Great Scot, The Admiral, The Dean, Mr. Bresse, Milecross Early, Langworthy, Conquest, Dobbie's Favourite, What's Wanted and The Cardinal. (Silver Knightian Medal.)

NATIONAL CHRYSANTHEMUM.

November 30.—A meeting of the Floral Committee was held on this date, when the following Awards were made.

First-class Certificate.

James Fraser.—A yellow Japanese variety with long, narrow florets. A late variety of much promise. Shown by Messrs. W. Wells and Co.

Commendation.

Commander Briggs.—A stiff-stemmed, single variety of red colour, with a yellow zone. Shown by Mr. G. Mileham, Leatherhead.

NATIONAL DAHLIA.

November 30.—The annual general meeting of this society was held at the Hotel Windsor on the 30th ult. The president, Mr. Reginald Cory, occupied the chair and there were about twenty present. The only business before the meeting was the passing of the annual report and balance-sheet and the election of officers for the coming year. In submitting the balance-sheet the secretary pointed out that there was a balance in hand of £37 19s. 6d., but the sum would have been more by £25 had the annual show been held, as this sum would have been paid by the Crystal Palace authorities. The treasurer, Mr. John Green, regretted that the income showed a considerable decrease since 1910, when it amounted to £215 17s., and showed that in 1911 they received £128 14s. 3d., in 1912 £121 1s. 7d., and in 1913 £124 14s. 9d., compared with £79 1s. in 1914. The deficiency was entirely due to the falling off in the number of members.

Mr. Jarrett suggested that efforts should be made to arouse greater interest in the society, and asked what had been done in this direction, offering the suggestion that those who had formerly supported the society should be circularised. Mr. Joseph Cheal also pointed to the need for obtaining a larger membership. He considered that the Duffryn trials had done much to advance the claims of the Dahlia as a garden flower. Some advantage would be derived by issuing their publications earlier. The president was in favour of any scheme that would make the society more widely known, and agreed with the suggestion to send circulars to those who might be interested in Dahlias. He considered that trade growers should send out their plants earlier than May, as this was too late to expect a long season for flowering. If they could get their plants well established and ready for putting out at the earliest opportunity, they would have a display of flowers a month or more before they had them now. He had found that some of the varieties at Duffryn never bloomed at all, because they were received too late in the season. The secretary then read the annual report, from which the following are extracts:—

EXTRACTS FROM THE REPORT.

Owing to the unfortunate outbreak of war it was found impossible to hold the annual exhibition. Arrangements were completed for holding the annual show as usual at the Crystal Palace, but the Government acquired the premises for Naval training purposes, and the Crystal Palace authorities were obliged to cancel their agreement. Arrangements were at once made to transfer the show to the Royal Horticultural Hall, but these premises were also taken over by the Government for military purposes. Your committee then decided that it was too late in the season to arrange for an exhibition, which was therefore abandoned.

The Competition for the Cory Cup was held at the Royal Horticultural Hall on September 8, and produced a wonderful display in the trade classes. Unfortunately the competition in the amateur class did not come up to expectation, owing to a lack of competitors. The Floral Committee, in conjunction with the Floral Committee of the R.H.S., held three meetings for the purpose of granting Awards to Seedling Dahlias, and large numbers were staged on each occasion, several Awards being made.

By the kindness of Mr. Reginald Cory, trials were held at Duffryn on similar lines to those of last year, except that only new varieties or those introduced in 1914 were eligible. A joint committee of the R.H.S. and N.D.S. inspected the plants during September.

A similar trial was held in Edinburgh at the nursery of Messrs. Dobbie and Co., under the personal supervision of Mr. R. Fife, and was a great success. The judges were appointed by the society, and their awards, taken in comparison with a similar trial held at Duffryn last year, proved most interesting.

A conference was held at Carr's Restaurant, Strand, on October 15, the president (Mr. R. Cory) occupied the chair. Papers were contributed by Mr. J. Cheal, V.M.H., on "Dahlias for Parks and Gardens," and by Mr. Jas. Stredwick on "The History and Development of the Dahlia."

On the motion of the chairman the report and the balance-sheet were adopted. Mr. Reginald Cory was re-appointed president; Mr. J. Cheal chairman of committee; Mr. John Green treasurer, and Mr. G. L. Caselton hon. show superintendent; Mr. J. B. Riding was re-appointed secretary, and asked to accept an honorarium of £10. The various committees were re-elected; Mr. Horace Wright was elected a member of the Publication Committee; and three vacancies on the general committee were filled by the election of Messrs. J. I. Lowles, H. Wright and G. F. Tinley.

PERPETUAL-FLOWERING CARNATION.

December 2.—The seventeenth show of this society was held on the above date in the R.H.S. Hall, Westminster. The exhibits of Carnations were fewer than usual, because most of the prize money was withheld, but the majority of the exhibits of the previous day remained, and together they sufficed to fill the Hall. The principal falling off was in the Competitive Classes, for the entries only numbered 23, compared with 54 last season. Two new varieties were awarded Certificates of Merit.

During the afternoon an auction sale of flowers was held on behalf of the Belgian Relief Fund, and a sum of nearly £20 was realised.

Open Classes.

No exhibit was forthcoming in the class for a group of cut blooms in not fewer than 12 varieties, and only two competed in the class for three vases of 12 blooms, each of British novelties distributed since January 1, 1912. Mr. J. S. Brunton offered a Silver Challenge Cup for the best exhibit, and it was won by Mr. C. Engelmann, Saffron Walden, with the varieties Fanny, a pink fancy flower striped with red, Scarlet Carola and Snowstorm. The only other competitors, Messrs. Allwood Bros., Wivelsfield, were awarded the 2nd prize for Mary Allwood, Salmon Enchantress, and Queen Alexandra, pale salmon.

Mr. Engelmann was also successful in the class for three vases of American-raised novelties, thus winning the Challenge Cup offered by the American Carnation Society. He showed Enchantress Supreme, Gorgeous, and Peerless. Messrs. W. Wells and Co. showed the fine scarlet variety Champion (see Supplementary Illustration) in this class, whilst Messrs. Allwood Bros. staged a fine vase of the pale-pink Enchantress Supreme.

The class for 12 varieties in vases, 25 blooms of each sort, brought forth two fine collections. The 1st prize included the handsome Challenge Cup presented by Mr. George Monro, jun., and it was won by Mr. C. Engelmann, Saffron Walden, who showed splendid blooms of Benora, White Wonder, Carola, Georgeous, Lady Northcliffe, Lady Meyer, Sunstar, Colleen, Scarlet Carola, Fanny, White Enchantress, and Enchantress Supreme; 2nd, Col. Rideout, Clury Nurseries, Langley, with Mikado, Sunstar, Winsor, Mrs. C. W. Ward, British Triumph, Baroness de Brienen, and others.

Prizes were offered by Mr. E. Draps-Boudry, Oostdunkerke, Belgium, for 50 blooms of one variety in a vase. There was only one exhibit—the variety Enchantress, shown by Mr. J. Jenner, Rayleigh, and he was awarded the 1st prize.

Messrs. Allwood Bros. exhibited the best vase of Princess Dagmar, a fine clove-coloured variety, thus winning the Cup offered by Messrs. Patten and Co., U.S.A.

In the nurserymen's classes Sir Randolf Baker, Bart., Blandford (gr. Mr. Usher), won the 1st prize offered by Mr. W. H. Page for six plants in six varieties; Capt. Macpherson the 1st prizes in Messrs. Stuart Low and Co.'s classes for the variety Baroness de Brienen, and not fewer than four of the firm's novelties, whilst the Countess of Derby showed the best vase of British-raised seedlings, thus winning the Cup offered by Mrs. Frederick Norman.

Group of Plants.—Two exhibits were staged in the class for a group of Perpetual-flowering Carnations arranged in a semi-circular space of 25 square feet. Both were meritorious groups, but Mrs. A. Morrison, Winchester (gr. Mr. E. J. Howell), had the slightly better exhibit and was awarded the 1st prize; Sir D. F. Gooch, Bart., Chelmsford (gr. Mr. W. Heath), being placed 2nd.

Colour Classes.

There were eight classes in four sections for varieties classified according to colour, (a) open to all members, (b) open to gentlemen's gardeners and amateurs, (c) open only to amateur members, (d) open only to members who have never won two 1st prizes at these shows.

Twenty-five blooms were required in section (a), five blooms in section (b), and three blooms in (c) and (d). There was only one competitor in each of the two sections for amateurs, (c) and (d), Mrs. A. Whitworth, Datchet, and J. Mackenzie, Esq., Shooter's Hill, respectively, and both were awarded seven 1st prizes and one 2nd prize.

The varieties and exhibitors in (a) and (b) were as follows:—

Enchantress, Lady Meyer, R. F. Felton, and similar colours.—(a) 1st, Laura Webber (Messrs. W. Wells and Co.); 2nd, Délice (Mr. H. J. Dudney, Erith); (b) 1st, R. F. Felton (The Countess of Derby, Sunningdale, Berkshire; gr. Mr. W. J. Reed); 2nd, Enchantress Supreme (Mrs. Frederick Norman, Much Hadham).

Baroness de Brienen, Lady Northcliffe, Pink Delight, and similar colours.—(a) 1st, Pink Sensation (W. Wells and Co.). This exhibit was awarded the Silver-gilt Medal offered for the best vase in the show; 2nd, Lady Northcliffe (Mr. Jenner, Rayleigh); (b) 1st, Baroness de Brienen (The Countess of Derby); 2nd, Lady Northcliffe (Capt. Duncan Macpherson, Yeovil; gr. Mr. H. Cullwick).

Rose Pink Enchantress, Winson, Pioneer, and similar colours.—There were no competitors in section (a), but in (b) the awards were:—1st, Rose Pink Enchantress (J. Cross, Esq., Rugby; gr., Mr. W. Dance); 2nd, the same variety (shown by The Countess of Derby).

Lawson, Mrs. C. W. Ward, and similar colours.—(a) 1st, Good Cheer (W. Wells and Co., the only exhibitor); (b) 1st, Mrs. C. W. Ward (Capt. Macpherson); 2nd, Lady Alington (Mr. Cross).

White.—(a) 1st, White Wonder (Mr. H. T. Mason, Hampton Hill); (b) 2nd, Wivelsfield Wonder (Messrs. Allwood Bros.); (b) 1st and 2nd, White Wonder. Shown by the Countess of Derby and Mrs. F. Norman, respectively.

Scarlet.—(a) 1st, Champion (Wells and Co.); 2nd, Scarlet Glow (Mr. Mason); (b) 1st, St. Nicholas, shown by Mr. Cross; 2nd, Scarlet Glow, shown by Mrs. Fenwick, Rugby (gr. Mr. E. Burbidge).

Crimson or Clove.—(a) 1st, Warrior (Mr. Mason); 2nd, Triumph (Mr. Jenner); (b) the variety Carola won the three prizes, the best blooms being shown by the Countess of Derby.

Any other self variety.—(a) 1st, Mary Allwood (Allwood Bros.); 2nd, Mikado (Mr. Dudney); (b) 1st, Mikado, heliotrope with rose shading (Mr. Cross); 2nd, Fairmount (Mr. H. Bridle, Wimborne).

The variety Mandarin, shown by Mr. Cross, was adjudged the best fancy in Class 40; Benora, shown by Messrs. Wells and Co., the best fancy in Class 14; and this firm won the 1st prize in Messrs. Geo Mount and Sons' class for 12 blooms of any registered variety not in commerce with Pink Sensation.

Certificates of Merit.

Délice.—A clear pink variety of the Enchantress type, the blooms measuring more than 3 inches across. Shown by Mr. H. Dudney.

Nora West.—The colour is salmon-pink, and the petals have good substance. The variety is very free blooming and recommended for winter flowering. Shown by Mr. West.

Non-Competitive Awards.

Large Gold Medals were awarded to Mr. C. Engelmann, Saffron Walden, and Mr. A. F. Dutton, Iver; Gold Medals to Messrs. Allwood Bros., Wivelsfield, and Messrs. Stuart Low and Co., Enfield; Silver-gilt Medal to Mr. H. Burnett, Guernsey; and a Silver Medal to Messrs. W. Cutbush and Son, Highgate, all of whom staged Carnations.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

November 19.—*Members of Committee present:* Rev. J. Crombleholme (in the chair), Messrs. R. Ashworth, J. Bamber, J. Cypher, A. G. Ellwood, J. Evans, A. Hanmer, J. Howes, A. J. Keeling, D. McLeod, W. J. Morgan, C. Parker, W. Shackleton, H. Thorp, Z. A. Ward, G. Weatherby and H. Arthur (secretary).

R. Ashworth, Esq., Newchurch (gr. Mr. Gilden), was awarded a Large Silver Medal for a group comprising Odontoglossum crispum Mrs. J. Helm, O. amabile Ashworth's var., O. Rouge Dragon, O. Lambeauianum Fletcheri, Cattleya Alcimeda var. Antiochus, C. labiata Andromache, Cypripedium Dreadnought, C. Queen Alexandra, C. Eve, Oncidium Rogersii and others.

Col. J. Rutherford, M.P., Blackburn (gr. Mr. Lupton), was also awarded a Large Silver Medal for a group composed principally of Cattleya labiata in variety, Sophro-Cattleya Doris, Brasso-Cattleyas, Cypripedium Shogun, C. Leeanum Balliae, C. Thalia Mrs. F. Wellesley, C. Maudiae and others.

Wm. Thompson, Esq., Walton Grange (gr. Mr. Howes), was awarded a Silver Medal for a group. Notable plants were Odontoglossum crispum Hololeucum Ashford var., O. Pescatorei album, Cypripedium Eileen, C. Queen Alexandra, C. Arthurianum, C. insigne Sanderae, C. i. Snow Queen, Miltonia Bleueana Stevensii, M. Leopoldii, Cattleya labiata Athene, Oncidium cheirophorum and others.

Messrs. Cypher and Sons, Cheltenham, were awarded a Large Silver Medal for a group of choice Cypripediums.

Other exhibitors were S. Gratrix, Esq., Whalley Range (gr. Mr. Brown); Z. A. Ward, Esq., Northenden (gr. Mr. Weatherby); P. Smith, Esq., Ashton-on-Mersey (gr. Mr. E. Thompson); H. J. Bromilow, Esq., Rann Lea (gr. Mr. W. J. Morgan); Messrs. Sander and Sons, St. Albans; Messrs. A. J. Keeling and Sons, Bradford; Messrs. J. and A. McBean, Cooksbridge; Messrs. Charlesworth and Co., Haywards Heath; and Mr. W. Shackleton, Bradford.

AWARDS.

First-class Certificates.

Odontoglossum crispum Hololeucum.—A large, round flower with yellow blotch on the lip.

O. Hermes.—Petals madder-crimson, with sepals of a browner shade. Both shown by Wm. Thompson, Esq.

O. crispum Mrs. J. Helm (*Rossendale* × *Empress of India*).—A large flower with blotches of a crimson-madder colour.

Cattleya Alcimeda var. Antiochus (*Gaskelliana alba* × *labiata alba*).—The segments are broad and there are yellow lines in the throat. Both shown by R. Ashworth, Esq.

Odontoglossum Zulu (*Harryanum* × *eximium*).—Sepals and petals crimson-madder, with purple lined tips and white edges. Exhibited by Z. A. Ward, Esq.

Awards of Merit.

Cypripedium Actaeus Ethel (*Leeanum Clinkaberryanum* × *Harefield Hall*), *C. Royal George* (*Harrisianum* × *Minos Youngii*), *Cattleya Helius var. Mary Amelia* (*Iris* × *aurea*). All exhibited by S. Gratrix, Esq.

Cattleya labiata Andromache and *Sophro-Cattleya Pearle* (*C. Portia* × *S.-C. Doris*). Both shown by R. Ashworth, Esq.

Cypripedium Eileen (*Euryades* × *Beekmanii*), from Wm. Thompson, Esq.

C. Selene (*Triumphans* × *Godefroyae*), from H. A. Bromilow, Esq.

C. Reginald Young var. Calliope (*Harefield Hall* × *Hitchensae*), from Messrs. A. J. Keeling and Sons.

LANCASTER HORTICULTURAL.

The annual Chrysanthemum Show of the Lancaster Horticultural Association having been abandoned, a series of exhibitions have been held in conjunction with the meetings and lectures. The first lecture was given by Rev. Fr. Langtree, of Grange; the subject was "Roses," illustrated by autochrome slides. The competition was for Apples. Splendid fruits were shown, especially the dessert variety Chas. Ross. The last lecture was one by Mr. W. G. BLACK, gardener to Lord Ashton, and his subject "Vegetables," illustrated by lantern slides. The exhibition comprised decorative and single Chrysanthemums. Mr. S. F. CURTIS showed the best decorative variety, having handsome blooms of Felton's Favourite; Mr. G. BARWISE showed a good vase of Le Pactole. Single Chrysanthemums were a feature, and Mr. CURTIS again excelled with the variety Josephine; 2nd, Mr. J. WINDER, with Mensa.

LINNEAN.

NOVEMBER 5.—At a meeting of this society, held on the 5th ult., the following invitation was read from the chair :—

"BELGIAN NATURALISTS IN ENGLAND.—Any Fellow of the Linnean Society who is acquainted with any Belgian botanist or zoologist now in England, is requested to communicate with the general secretary, who will submit the name to a committee appointed by the Council for the purpose.

"The committee are empowered to invite Belgian botanists and zoologists (whether ladies or gentlemen) to attend the meetings of the society, and to make use of the library, under certain restrictions as to borrowing books. Notices of the meetings will be sent to them during their stay in this country."

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 2.

A Very Warm and Wet Week.—The last eight days and nights have been all warm for the time of year, and on one night the exposed thermometer never fell lower than 45°—a very high minimum for the end of November. The ground is now 1° warmer at 2 feet deep, and 2° warmer at 1 foot deep, than is seasonable. Rain fell on five days, to the total depth of rather more than an inch. During the week 5¼ gallons of rainwater have come through the bare soil percolation gauge, and 4¼ gallons through that on which short grass is growing. Both gauges are a yard square and 2½ feet deep. The sun shone on an average for 1 hour 50 minutes a day, which is a quarter of an hour a day above the average for the same period of the year. On three consecutive days no sunshine at all was recorded. On the contrary, on two other days the sun was shining brightly for over five hours. The winds have been as a rule high, but in no hour did the mean velocity exceed eighteen miles—direction S.S.W. The average amount of moisture in the air at 3 p.m. fell short of a seasonable quantity for that hour by 5 per cent.

NOVEMBER.

Warm, and Rather Dry, With a Good Record of Sunshine.—Taken as a whole, this was a warm November. The first thirteen and the last six days of the month were very warm, but during the intervening eleven days low temperatures as a rule prevailed, both during the daytime and at night. On the warmest day the temperature in the thermometer screen rose to 62°, making this the warmest November day for twelve years. On the coldest night the exposed thermometer registered 13° of frost, which is slightly above the average extreme minimum for the month. Rain fell on seventeen days, and to the total depth of 2½ inches, which is ¼ inch less than the November average. A few flakes of snow fell on two days. The sun shone on an average for 2 hours 20 minutes a day, which is half an hour a day longer than the mean duration for November—making this, with four exceptions, the sunniest November yet recorded here. There were only seven days which were altogether sunless. The winds were, taking the month as a whole, of about average strength. In the windiest hour the mean velocity rose to twenty-one miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon fell short of a seasonable quantity for that hour by 5 per cent.

THE AUTUMN.

Dry, Rather Warm, and Very Sunny.—Taken as a whole, this was rather a warm autumn, September being of about average temperature, while October and November were both unseasonably warm. The total rainfall, taking the three months as a whole, was a good deal below the average for the season, September being exceptionally dry, October dry, and November slightly below average. The sun shone on an average for 4 hours 3 minutes a day, making this, with one exception (1911), the sunniest autumn I have yet recorded here. September proved unusually sunny, October rather dull, while in November there was, for the month, a remarkably good record of sunshine.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the present drainage year began in October the total rainfall has fallen short of the average for the previous fifty-eight years by 1¼ inches which is equivalent to a deficiency of 26,015 gallons on each acre in this district. At the same time last year there was an excess of 17,640 gallons per acre. *E. M., Berkhamsted, December 2, 1914.*

MARKETS.

COVENT GARDEN, December 2.

Cut Flowers, &c., Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz. ..	3 6- 5 0
Azalea, white, per doz. bunches..	4 0- 4 6
Bouvardia, pink, per doz. bun...	5 0- 6 0
— white	5 0- 6 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties ..	1 3- 1 9
— smaller, per doz. bunches..	10 0-12 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz. ..	2 0- 3 0
— yellow per doz.	2 0- 2 6
— pink ,,	1 9- 2 0
— bronze ,,	1 9- 2 0
— white, medium per doz. ..	1 6- 1 9
— coloured, per doz.	1 3- 1 9
— Spray, white, per doz. bun...	4 6- 6 0
— — yellow, per doz. bun. ..	4 0- 6 0
— — pink, per doz. bun. ..	5 0- 8 0
— — bronze, per doz. bun. ..	4 0- 6 0
— singles, disbudded, per doz. blooms ..	0 9- 1 3
— — sprays, per doz. bunches ..	4 0- 8 0
Eucharis, per doz.	2 0- 2 6
Gardenias, per box of 15 and 18 blooms.. ..	2 6- 3 6
Hyacinths, Roman, 6's, per doz. bunches ..	16 0-18 0
Lapageria alba, per doz. blooms ..	— —
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long	2 6- 3 9
— — short ..	2 6- 3 0

	s.d. s.d.
Lilium lancifolium album, long ..	1 9- 2 0
— — — short ..	1 6- 2 0
— — rubrum, per doz., long ..	1 3- 1 6
— — — short ..	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	1 6- 2 0
Narcissus, Soliel d'or, per doz. bun.	5 0- 6 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium ..	1 6- 2 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches ..	5 0- 6 0
Poinsettias, per doz. blooms ..	9 0-12 0
Roses: per dozen blooms, Bride	1 6- 2 6
— Kaiserin Augusta Victoria	1 6- 2 0
— Lady Hillingdon	1 3- 1 6
— Liberty ..	1 6- 3 6
— Madame A. Chatenay ..	1 0- 2 6
— Melody ..	1 3- 1 9
— My Maryland ..	1 3- 1 9
— Niphetos ..	1 3- 1 6
— Prince de Bulgarie	1 6- 2 0
— Richmond ..	1 6- 3 6
— Sunburst ..	1 3- 2 0
— Sunrise ..	1 0- 1 6
— White Crawford	1 6- 2 6
Tuberoses, on stems, per doz ..	0 5- 0 6
— short, per doz.	0 4 —
Violets, English, per doz. bunches ..	1 3- 2 0
— Princess of Wales, doz. bun.	2 6- 3 6
White Heather, per doz. bunches ..	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s.d. s.d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	5 0- 6 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Autumn foliage, various, per doz. bunches ..	6 0-10 0
Carnation foliage, doz. bunches .	3 0- 5 0
Croton foliage, doz. bunches ..	12 0-15 0

	s.d. s.d.
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Fern, French, per doz. bunches..	0 6- 0 8
Honesty, per doz. bun.	10 0-12 0
Lichen Moss, per doz. boxes ..	10 0-12 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
— French, per doz. bunches..	1 0- 1 3
Pernettia, well berried, per doz. bunches ..	8 0- 9 0

REMARKS.—Business is more brisk this week, white flowers being in great demand. There is still an abundant supply of Chrysanthemums, and better prices are being realised for good white specimens and spray white. Of coloured varieties, of which there is a good selection, pink and bronze are selling well. Richardias (Arums) are scarce, and the highest price since Easter has been realised for them. Of Carnations, white and scarlet varieties are selling the best. Gardenias, Tuberoses and Bouvardias are becoming scarce. Poinsettias and Roman Hyacinths are gradually increasing in quantity, but the demand is not great. The supply being limited, high prices are being asked for good specimens of Roman Hyacinths. Red Roses are more in demand than those of other colours. Violets are more plentiful, and the prices more reasonable. It is expected that the first consignment of Violets from the South of France will arrive soon.

Plants in Pots, &c.: Average Wholesale Prices.

	s.d. s.d.
Aralia Sieboldii, dozen ...	4 0- 6 0
Araucaria excelsa, per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz. green	18 0-30 0
— variegated ..	30 0-60 0

	s.d. s.d.
Begonia Gloire de Lorraine, 48's, per dozen ..	10 0-12 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 1[illegible]'s ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s.d. s.d.
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen ..	10 0-12 0
Erica, gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 9 0
— hyemalis, 48's, per doz. ..	8 0-10 0
— — alba ..	10 0-12 0
— nivalis, 48's, per dozen ..	9 0-10 0
— — thumbs, per doz. ..	3 0- 5 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0
— in 32's, per doz.	10 0-18 0

	s.d. s.d.
Geonoma gracilis, 60's, per dozen	6 0- 8 0
— larger, each ..	2 6- 7 6
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0-36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, per doz.	18 0-24 0
— — rubrum, per dozen ..	15 0-21 0
— longiflorum, per dozen	15 0-18 0
Lily-of-the-Valley,	—
48's, per dozen	24 0-30 0
Marguerites, in 48's, per doz., white	8 0-10 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Poinsettias, 48's, per doz. ..	9 0-10 0

REMARKS.—Trade in this department is not so good as is usual at this time of the year, but a slight improvement is apparent this week. Ferns and Palms are in greater demand, as also are Solanums, Cyclamen, White Spiraea, Poinsettias, and Lilium Harrisii, but there is still a great quantity of Ericas on the market.

Fruit: Average Wholesale Prices.

Apples—	s.d. s.d
— English, cooking, per bus. ..	3 6- 4 6
— — dessert, per ½ bushel ..	2 0- 6 0
— Nova Scotia, per brl. ..	12 0-20 0
— United States, per barrel ..	13 0-18 0
— Californian, per box ..	5 0- 7 0
— Oregon, per box	7 0-10 0
Bananas, bunch:	
— Medium ..	6 0 —
— X-medium ..	7 0 —
— Extra	8 0 —
— Double X ..	9 0 —
— Giant	10 0-12 0
— Red, per ton ..	£20 —
— Jamaica, p. ton	£10- £11
Cobnuts, per lb. ..	0 4½- 0 5
Cranberries, per case	8 0-12 6

	s.d. s.d
Grapes: Alicante, per lb.	0 7- 1 6
— Almeria, per barrel of 3 doz. lbs.	10 6-15 0
— English, Gros Colmar, per lb.	0 8- 1 9
— Muscat of Alexandria ..	2 0- 4 0
— Canon Hall, per lb.	2 0- 5 0
Medlars, per ½ sieve	3 0- 4 0
Melons	0 9- 2 0
Nuts, Brazils, p. cwt.	60 0 —
— Chestnuts, per bag	14 0-21 0
Pears, American, per barrel ..	22 0-32 0
— Californian, per case ..	12 6-15 0
— stewing, per bushel.. ..	7 0- 8 0

REMARKS.—Fewer supplies of Apples have arrived from home growers, the principal varieties available being Bramley's Seedling, Dumelow's Seedling (syn. Wellington), Blenheim Pippin, and Cox's Orange Pippin. There has been a decided shortage of Apples from the Colonies. The following varieties of Pears are now available: Keiffer, Winter Nélis, Easter Beurré, Glou Morçeau, and Doyenné du Comice. Almeria Grapes in barrels of about 3 dozen lbs. are good and plentiful. Supplies of Black Alicante and Gros Colmar Grapes are up to the average, and, as is usual at this time of year, the supplies of Muscats are lessening. Figs, Dates, and Carlsbad Plums will be scarce this season. Tropical fruits available include Persimmons, Custard Apples and Pineapples, the latter being very plentiful. *E. H. R., Covent Garden, December 2.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	3 6- 4 6
Beans, French, per lb.	1 0- 1 6
Beetroot, per bushel	2 6- 3 0
Brussels Sprouts, per ½ bus. ..	0 9- 1 0
Cabbages, per tally	8 0-10 0
Carrots, per cwt. ..	2 6- 3 0
Cauliflowers, per tally	12 0-15 0
Celeriac, per doz. ..	3 6 —
Celery, per doz. bun.	7 0- 9 0
Chicory, Belgium, per lb... ..	0 4- 0 5
Cucumbers, per doz.	4 0- 5 0
Eschallots, per ½ sieve	2 0- 2 6
Garlic, per lb. ..	0 6- 0 7
Globe artichokes, per doz. ..	3 6- 5 0
Herbs, per doz. bunches ..	2 0- 9 0
Horseradish, English, per bundle	2 0- 2 6

	s.d. s.d.
Leeks, per dozen ..	1 6- 2 0
Lettuce, per doz...	2 6- 3 0
Mushrooms, cultivated, per lb...	0 10- 1 0
— Buttons ..	0 10- 1 0
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per cwt. ..	10 0-12 0
Parsnips, per cwt.	4 0- 4 6
Peas, per lb. ..	0 9- 1 0
Potatos, new, per lb.	0 6- 0 8
Seakale, per doz. punnets ..	15 0-18 0
Spinach, per bus...	3 0- 3 6
Tomatos, English, per doz. lbs. ..	4 6- 5 6
— seconds ..	2 0- 4 0
— Teneriffe, per bundle . ..	14 0-22 0
Turnip, English, per cwt.	2 0- 4 0
Turnip tops, p. bus.	1 0- 1 6
Watercress, p. doz.	0 6- 0 8

REMARKS.—There has only been a limited supply of English Tomatos and Cucumbers, and Teneriffe Tomatos are likely to continue to be scarce, there only being half a crop available. French Beans, Cauliflowers, Cabbages, Lettuce and Mushrooms are all scarce. Trade in all departments has shown an improvement.—*E. H. R., Covent Garden, December 2.*

New Potatos.

	s.d. s.d.
Bedford	3 6- 3 9
Blackland	3 3- 3 6
Dunbars — Up-to-date	4 9- 5 0

	s.d. s.d.
Dunbar — Langworthy ..	5 6 —
Essex	3 6- 3 9
Kent	3 6- 4 0
Lincoln	3 3- 4 0

REMARKS.—Trade is fairly good. Stocks in London are moderately heavy, and prices remain about the same as last week.—*Edward J. Newborn, Covent Garden and St. Pancras, December 2.*

DEBATING SOCIETIES.

CHELMSFORD AND DISTRICT GARDENERS'.—The third meeting of the winter session was held in the East Anglian Institute of Agriculture on Friday, the 6th ult. Mr. C. E. Searles occupied the chair, and about 25 members were present. Mr. Healy, of Danbury, gave a lecture on "Rock Gardens." He explained certain matters that called for consideration before laying out a rock garden, and described the best position for such a garden. Advice was given as to the arranging of the rocks in order to get the best possible effect. Mr. Healy gave a list of the best kinds of rockery plants, and described the positions they should occupy. Last summer the members of the association visited Danbury Park, and inspected the beautiful rock garden which is under Mr. Healy's care.

—— The fourth meeting of the winter session was held in the East Anglian Institute of Agriculture. Mr. J. H. Hull presided, and about sixty members were present. Previous to the lecture the annual exhibition was held. There were ten classes, and the competition was keen, especially in the fruit classes, where the judges awarded three extra prizes. During the evening Mr. E. H. Christy gave a lecture on "Sweet Peas."

KILMARNOCK AND DISTRICT GARDENERS'.—The second meeting of the winter session was held on the 11th ult., Mr. A. Dewar presiding over a good attendance of members. Bailie S. Arnott, Dumfries, delivered a lecture, with limelight illustrations, on "Moraine Gardening." Mr. Arnott said that one of the chief causes leading up to the present interest displayed in moraine gardening had been the endeavour to solve the problem of preventing certain alpines from damping off or rotting at the neck in the winter months. The gravel or chips comprising the surface layer of a properly drained moraine practically overcomes this difficulty. He advocated excavating the site to a depth of about 18 inches, and placing first a 6-inch layer of drainage material in position. On top of this should be arranged 6 inches of good soil and the remaining space should be composed of either gravel or whinstone chips. Other materials might be used for this surface layer, but all possess certain objectionable features. The moraine should be in full sun and not subject to drip from trees. A moraine constructed on a slope is preferable to one on the level and water running through or adjoining is generally desirable.

BIRMINGHAM AND DISTRICT GARDENERS'.—At the meeting held on the 19th ult. Mr. J. Higley presided. The treasurer, Mr. W. Spinks, delivered an address on "Flowering Trees and Shrubs." Mr. Spinks dealt with his subject under the following headings: (1) Large flowering shrubs of ornamental character; (2) the smaller or freer-flowering kinds; (3) evergreens; (4) deciduous trees and shrubs. He gave a select list of varieties, with a few remarks on the habits and method of cultivation in each case.

DUMFRIES AND GALLOWAY GARDENERS'.—The members of this association met in the Wesley Halls, Dumfries, on the 21st ult., Mr. S. Arnott, president, in the chair. Mr. W. M'Guffog, gardener to the Countess of Selkirk, Balmae, Kirkcudbright, gave an address on "The Cultivation of the Pear." Mr. M'Guffog's remarks were well received and led to an interesting discussion.

WARGRAVE AND DISTRICT GARDENERS'.—The last meeting of the Association was devoted to competitions in Vase Decoration. Eight entered in the Head Gardeners' Class, in which a large vase was required to be arranged for effect. The prizewinners were: 1st, Messrs. F. Gray; 2nd, W. Clarke; 3rd, H. Attlesly. In the Journeyman's Class, which was for a Table Decoration of one large and four small vases, there were four competitors, and the prizes were won by Messrs. Wixon (1st) and Bishop (2nd). The flowers were sent to the Royal Berkshire Hospital the following morning.

CROVDON AND DISTRICT HORTICULTURAL.—At the meeting held on the 24th ult. Mr. W. Coles delivered a lecture on "The Cultivation of Bulbs." Mr. Coles gave the following directions for growing bulbs in moss fibre in receptacles without drainage. After well soaking the fibre and squeezing the superfluous water from it, place a few lumps of charcoal at the bottom of the bowl. Upon the charcoal sprinkle a little of the moss fibre, and on this place the bulbs, afterwards filling in the bowl to within an inch of the top of bowl, with more fibre pressed gently around each bulb. The bowls should then be placed in a dark place, where plenty of air circulates, and left for about six weeks. The pans should be examined periodically, and if the contents are dry, moistened with a little rainwater. During this time the bulbs will have made good root-growth, and should be gradually exposed to the light. A little attention to watering is all that is required, and they may be flowered in a room or greenhouse as occasion requires.

TRADE NOTE.

DITTON COURT FARM, LTD.

This company has been formed with a nominal capital of £3,000 in £1 shares, to acquire Ditton Court Farm, Ditton, near Maidstone, and to carry on the business of florists, nurserymen, hop growers, etc. The directors are Mr. B. W. Tolhurst, of 87, High Street, Southend-on-Sea, solicitor, and Mr. W. H. Tolhurst, of Ditton Court Farm, near Maidstone.

LAW NOTE.

STATUTORY SMALL TENANTS AND MARKET GARDENING.

A decision of Sheriff-Substitute Sym, recently, in the Sheriff Court of Perthshire has aroused considerable interest, and it is possible that an appeal may be taken to a higher court. The decision in question is held to indicate the view that a landlord is not entitled to eject his statutory small tenant or to order him to put his holding into ordinary agricultural condition on the ground that he has practically converted his holding into a market garden. The Sheriff-Substitute's judgment is given at considerable length, but it is held by many that it conflicts with a former decision of the Land Court.

Obituary.

Richard Nisbet.—We regret to record the death, at the age of 82, of Richard Nisbet, who was formerly gardener and bailiff to the late Duke of Westminster at Cliveden. He began his gardening career under his father at the early age of twelve. He filled positions in various gardens, and later obtained an appointment at Cliveden as head. Here he remained for some years, but on Mr. Astor purchasing the estate Mr. Nisbet left to take a similar appointment with the late R. Corbett, Esq., at Adderley Hall. This was his last charge. He stayed there for some years, and retiring, went to live at Market Drayton. During his early life he was an enthusiastic botanist, and spent a considerable portion of his leisure in the pursuit of his favourite science. He leaves a widow, three sons, and three daughters.

THE LATE RICHARD NISBET.

Answers to Correspondents

Lilium longiflorum: *Fairholme.* "Earliest of All" is one of the trade names of an early form of Lilium longiflorum from the southern islands of Japan, where the bulbs ripen early and reach this country in August and September. It is the "True Easter Lily" and "longiflorum formosum" of nurserymen's catalogues. Most growers have completely abandoned Harrisii in its favour, as in comparison it is much more vigorous, is earlier, and is almost free from disease. For early flowering it is the most reliable Lily, but for later work and retarding its place is generally taken by the black-stemmed "Takesima" form, which commences to reach this country towards the end of November.

"Lorette" Pruning: *H. B.* In reply to your questions Dr. Durham replies as follows:—All the foreign writers (excepting Lorette) I have read (French and German) seem to regard winter pruning as the means of training the "Charpente" or woody parts and summer *treatment* [*i.e.*, either pinching, breaking (cassement) or actual pruning (*i.e.*, with knife or sécateurs)] as the means of engendering fruit production. Pekrun lays stress on sap movements in the winter, and urges early winter pruning in order that this sap may not be already distributed in parts which are to be cut off, and thus wasted. M. le Cam likewise told me that he would do all his winter work in November if it were possible. Coursonne, *vide* article; Lorette, fig. 41, represents two coursonnes in an ordinary sense, *i.e.*, branch not charpente only bearing fruiting productions. Lambourde = spur: strictly the lambourde is the short, dowel-like stalk supporting the bouton à fleur, or fruit, but "le bouton et son support constituent une *lambourde.*" Shortening shoots (querist writes "spurs").—Wait till spring. Thinning compound spurs, *i.e.*, lambourdes multiples, is done in November. Pre-Lorettian writers advise only one, or at most two, boutons per lambourde; Lorette, whose lambourdes are direct on charpente, allows as many as five. In thinning out multiple or compound ones, leave the two or more boutons which are best placed and nearest the charpente. On Lorettian principles fruit spurs now, wood shoots in the spring or summer (p. 185). My own practice in conversion is, "Don't hurry."

Names of Fruits: *P. H. R.* Beurré Diel; 1, Alfriston; 2 and 6, Lord Derby; 3, Red Winter Reinette; 4, Brabant Bellefleur (syn. Glory of Flanders); 5, Rival; 7, Whiting Pippin; 8, Newton Wonder.—*John Melrose.* 1, Sops in Wine; 2, Pine Golden Pippin; 3, not recognised; 4, Duchess of Oldenburg; 5, Flower of Herts.—*W. D. and Sons.* Beurré Benisson.—*R. R.* Doyenné du Comice.—*G. H. H. W.* 5, We still think it is Sturmer Pippin, otherwise we do not recognise it. Of course it may be a local variety; 6, more like Lord Burghley than Sturmer Pippin; 7, not recognised.—*H. F. Z.* 1, 2, and 3, Decayed; 4, Madame Treyve; 5, Easter Beurré; 6, Catillac; 7, Knight's Monarch; 8, Winter Quoining; 9, not recognised, most likely a local variety; 10, Golden Noble; 11, Hormead Pearmain; 12, Pitmaston Pine Apple.—*J. M.* 1, Sops in Wine; 2, Pine Golden Pippin; 3, not recognised; 4, Duchess of Oldenburg; 5, Flower of Herts.—*P. H. R.* Beurré Diel. 7, Alfriston; 2 and 6, Lord Derby; 3, Red Winter Reinette; 4, Brabant Bellefleur (syn. Glory of Flanders); 5, Rival; 7, Whiting Pippin; 8, Newton Wonder.

Names of Plants: *A. P.* 1, Begonia Dregei; 2, B. Alleryi; 3, B. coccinea.—*E. Feltham.* Conifer, Picea morinda, sometimes called P. Smithiana. Climber, apparently a species of Bignonia, so far as can be determined without flowers.—*A. D.* 1, Viburnum Tinus (Laurustinus); 2, Euonymus japonicus aurea variegata; 3, Cupressus sempervirens; 4, Cedrus Deodara.—*A. B. H.* Senecio Grayi.—*M. Felton.* Azara microphylla.

Winter Dressing for Fruit Trees: *F. E. N.* Lime-sulphur sticks on the trees better than lime alone. It can be bought ready made, to be diluted as sellers recommend for a winter wash. It should be applied just before the buds begin to burst, unless in the case of Plums it has to be put on sooner in consequence of birds beginning to eat the buds, in which case it should be applied immediately after an attack has started. Concentrated lime-sulphur is advertised by several makers. It is troublesome and messy to make; but if you desire to make it, full directions can be supplied. When home-made it has to be tested as to strength by a hydrometer.

Communications Received.—D. W.—Dr. D.—W. M.—F. E. N.—A. B. H.—W. D. S.—W. D. W.—E. F.—T. W. B.—A. J. H.—M. C. A.—E. T. E.—F. K.—S. L. B.—M. M. K.—C. J. B. M.—R. G. W.—A. J. M.—N. V. A.—J. C.—J. A.—H. W.—A. R.—C. H.—W. W.—S. J. C.—C. H. C.—W. C. C.

THE
Gardeners' Chronicle
No. 1,459.—SATURDAY, DECEMBER 12, 1914.

CONTENTS.

Adair Place 389
Antiseptics and soil micro-organisms .. 386
Apple, a seedling .. 386
Apples, a selection of.. 389
China, Tree-Paeonies in 387
Clayton, Henry J., memorial 389
Cyaniding for insect destruction 389
Dahlias and the Duffryn trials 379
Duthie Park, Aberdeen 389
Eastbourne's public gardener 389
Florists' flowers—
  Incurved Chrysanthemums at Nottingham 384
Flowering, unseasonable 389
Forrest, Mr. George .. 387
Fremontia californica.. 382
Freylinia cestroides .. 390
Fruit trees, the pruning of 382
Glasgow, rainfall at .. 390
Hints on planting Roses 390
Holland, the produce market in 387
Law note—
  Gardening contract dispute 392
"Lawrence" medal .. 386
Obituary—
  Lamb, Robert .. 392
Orchid notes and gleanings—
  Anguloa Cliftonii .. 381
  Cypripediums of the Chino-Thibetan borderland 381
Peas, late 389
"Pour nos amis français et belges" 383
Rosary, the—
  Rose American Pillar 384
Sap-density and frost .. 386
Smith, J. T., the late .. 389
Societies—
  National Chrysanthemum 391
  Perpetual-flowering Carnation 391
  Royal Horticultural 386
    (Scientific Committee) 390
  Smithfield Club .. 391
Stair, the late Earl of.. 386
Vegetables, old and new 384
War items 388
Week's work, the—
  Flower garden, the .. 384
  Fruits under glass .. 385
  Hardy fruit garden, the 385
  Kitchen garden, the.. 385
  Orchid houses, the .. 385
  Plants under glass .. 384
Williamson, the Rev. David R. 387
Wye Agricultural College 387

ILLUSTRATIONS.

Duffryn, South Wales, views at 379, 380, 381, 387
Fremontia californica, flowers of, 382; fruit of 382
Nursery at Antwerp, before and after the invasion .. 388

FLORISTS' DAHLIAS AND THE DUFFRYN TRIALS.

WHEN the modern history of Dahlia cultivation comes to be written the historian will surely give credit to Mr. Reginald Cory for his encouragement of the flower at a period when its popularity in this country had seriously declined. The story of its decline is not uninteresting.

Those who remember the variations Dahlia variabilis produced for half a century know that so long as there were fresh types of striking novelty forthcoming, and growers were satisfied with the behaviour of the plants in the garden, so long was public interest in the flower maintained. The zenith of its popularity came twenty years ago with the full development of the Cactus strain, which resulted from the introduction of the variety Juarezii. The "Cactus" flowers at the exhibitions were everywhere admired, and all amateur gardeners tried their skill in the cultivation of this fascinating strain. So things might have continued had raisers of seedlings not been so short-sighted as to see only those growers who attended the exhibitions. They knew, however, that the purchasers of high-priced novelties were to be found in the greatest numbers amongst the exhibitors, for naturally any novelty that possessed superior merit gave the more enterprising exhibitor an advantage over a competitor who was content to rely on the standard sorts. Hence raisers, in selecting their seedlings, looked with the greatest favour upon the prettiest and best-formed flower, such as would win prizes at the exhibitions, and did not allow themselves to consider sufficiently the value of the plant for garden decoration. Consequently varieties with unprepossessing habits, but capable of producing occasional flowers of wonderful charm, were included in every list of novelties, and far outnumbered those possessing good garden qualities.

The results of this policy were disastrous. Taken collectively, Cactus Dahlias became so weak and short in their flower-stems that their blooms, when fully expanded, were hidden away amongst the foliage of the plant, which, for decorative value in the garden, had very little merit. And the plants, being less floriferous than, for instance, the single Dahlias, came later into flower, and there were complaints that, so far from being the floriferous plants they had been formerly, modern Dahlias had come to include an overwhelming number that were coarse-growing and chiefly remarkable for excessive foliage. The punishment of those who had controlled the policy of the National Dahlia Society (for the Society appeared to encourage the raisers in their neglect of garden qualities) and of the raisers themselves was severe and general. Amateurs, having lost their appreciation for the plants as denizens of their own gardens, no longer cared to see the blooms at the exhibitions. Efforts to stem this reaction became evident a few years ago, when many of the specialists began to show a determination to improve matters. They rallied to the support of the National Society. The late Mr. George Gordon became President, and a general effort was made to familiarise the public once again with the claims of the Dahlia and to introduce into the exhibitions and lists of novelties, varieties that could be better depended upon to give a good return in the average garden.

Fig. 140.—Duffryn: entrance to the fountain court.

The Cardiff Trials.

At this particular juncture Mr. Reginald Cory, whose enthusiasm for the Dahlia is something to be admired, came to the Society with liberal offers of assistance. He announced his intention to arrange a comprehensive trial of "garden" Dahlias at Duffryn, near Cardiff, in the summer of 1913, and invited the co-operation of the Society. The Society welcomed the proposal, which also received the hearty support of the Royal Horticultural

Society. As a result of Mr. Cory's efforts so many as 1,000 varieties and 7,000 plants were sent to Duffryn for trial. These were received in small pots from foreign nurserymen no less than cultivators at home, and they were repotted by the gardener at Duffryn (Mr. Cobb) into larger pots—six inches and nine inches in diameter—prior to bedding out in order to prevent them from suffering before the time for planting arrived. The Duffryn gardens comprise upwards of 40 acres and the provision of flower beds and borders is so liberal that immense numbers of Dahlias can be cultivated with ease, but this fact notwithstanding, the ground was planted up to the very last foot. Nothing that trouble or expense could achieve was spared to make the trials as perfect as possible, and the results were such as to give satisfaction to all whose interest in the flower led them to make the journey to Cardiff. The trials were judged on the spot, whilst the plants were still in flower, by representatives of the two societies already mentioned, in the first week of September, and the award of three marks was given to a large number of varieties. (See *Gardeners' Chronicle*, December 13, 1913, p. 418.) Nothing could have been more felicitous than the interposition of Mr. Cory, for he came forward as the champion of the "garden" as distinguished from the "exhibition" Dahlia, and the trials were wholly in the interests of the decorative characteristics that had suffered persistent neglect. Consequently the awards given at Duffryn furnished an excellent guide to free-flowering varieties.

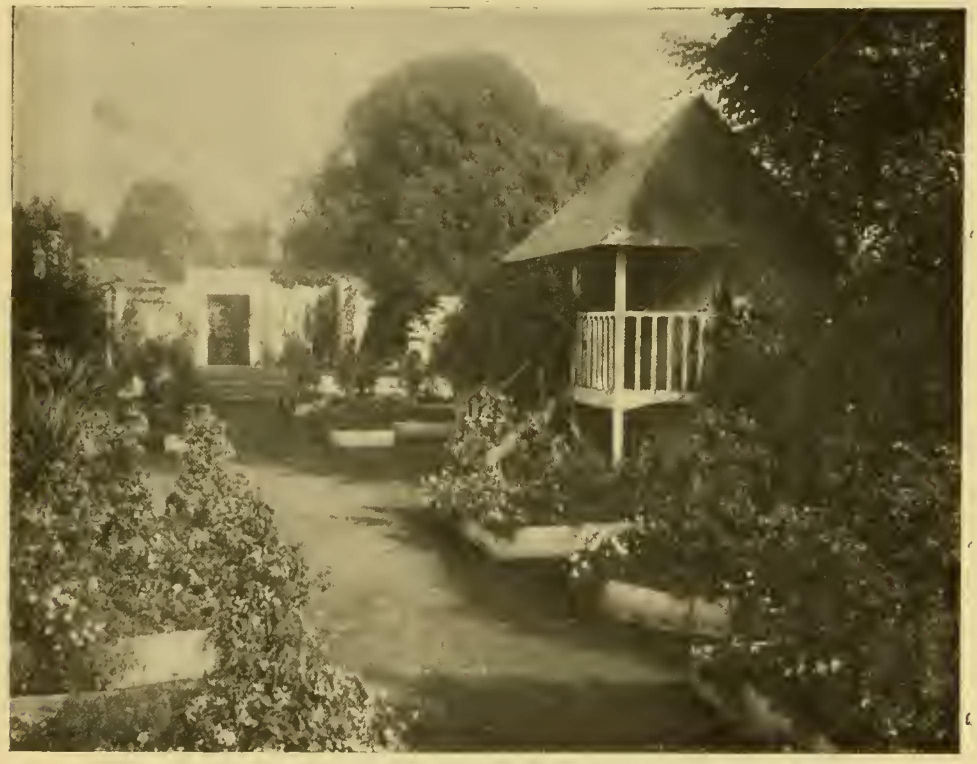


Fig. 141.—italian terrace at duffryn.

By this time Mr. Cory had raised seedlings at Duffryn, and these coming into flower maintained the interest so high that it was determined to grow more Dahlias than ever in 1914. The two societies were again asked to send a committee to inspect the trials and recommend awards, including a silver cup provided by Mr. Cory himself, for the best garden Dahlia, of any type, in the whole collection. The committee visited Duffryn on September 18 last for the purpose, and, by kind invitation of Mr. Cory, I was present on the same date. The silver cup was given to Mrs. J. C. Vaughan, a variety of the decorative type. In regard to this award it must be said that the impression it left upon my mind was that it is very difficult to get Dahlia specialists to understand exactly Mr. Cory's point of view. The variety has certainly a remarkable flower, its symmetrical form and particularly its large size distinguishing it from most others; but as I looked at the myriads of beautiful flowers on every hand, many of them possessing extraordinary decorative qualities and free-flowering habits, I felt that I could never have selected this large yellow bloom as the best "garden" Dahlia in that huge collection, and I am perfectly sure that Mr. Cory and his gardener were as surprised as I was at the committee's choice. In addition many varieties were awarded three marks, but for some reason, or more probably for no satisfactory reason at all, the list is still unpublished, and, in consequence, it will lose much of its value for next season.

It is not possible in mere words to describe adequately the splendid displays of bright colour provided by the single and Collerette types. If one type showed up better than all the others it was the Collerette, for it flowered as freely as the singles, and in most cases the blooms were produced on long, stiff stalks, that held them erect well above the foliage. These two types at least may be treated successfully as annuals by any who prefer to cultivate them as such. If the seeds be sown indoors in February for planting out at the end of May they will come into bloom quite early in the season. The Collerettes are said to come true from seeds so far as the type is concerned, but not in respect to colour. This is not true of other sections, for seeds of Cactus or Paeony-flowered varieties, for instance, are apt to produce seedlings of all types.

As one looked at the Duffryn Dahlias it was evident that apart from the infinite care taken in the cultivation there were other circumstances that contributed to the gorgeous yet artistic effects that met the eye at every turn, and two of these may be mentioned: first, the fact that the garden is specially suited for Dahlia cultivation, and second, that the numerous plants were grouped in all the beds of a complete flower garden. The Dahlia is a moisture-loving plant, and when it succeeds in some of the dry districts of Surrey and Sussex it is generally due to extra care in providing a first-class rooting medium. At Duffryn the average rainfall is heavy, and even in times of comparative drought neither the atmosphere nor the soil becomes so dry as is the case in many other districts. The effect is seen in the wonderful growth the seedlings make in the first season. Then as to the effects, Mr. Cobb's grouping in the variously-shaped beds left nothing to be desired. The borders, belts, oblong and round beds and mounds seemed all to be planted with the types that best fitted the positions, and I well remember how appropriately and pleasantly situated were some dwarf Pompons on one of the steeper slopes. I made mental notes of quite a number of Mr. Cory's seedlings which possess qualities that ought to justify their permanent cultivation, but as they are known at present only as numbers no good purpose would be served by describing them here. Another season, it may be hoped, the best of them will be given distinguishing names.

Other Features at Duffryn.

The visitor to Duffryn sees very much more than the Dahlias, and is astonished to hear that much of the work has been carried out during the last seven years by Mr. Cory and his energetic gardener. The improvements made have consisted in extending and modifying of the grounds as they were laid out by Mr. Mawson. The formal gardens around and in view of the house (see fig. 145) are strictly in the Italian style, in conformity with the Italian Renaissance of its architecture. They are separated from the rest of the grounds by balustraded walls and great hedges of Cypress and Yew. Behind these, to the south, east and west, lie the informal gardens and a series of "self-contained" gardens, enclosed with hedges or walls or treillage, all of which, with the exception of the circular rosary, and what used to be known as the Panel Garden, but is now the "Paved Court" (see fig. 142), have been constructed from designs drawn by Mr. Cory himself. The Italian terraces (see fig. 141), the Cloister Garden, the Fountain Court (see fig. 140), and the Norman Court, each present to the connoisseur widely different notes of appeal. Yet neither is like to the massing of the Dahlias, the hardy flower borders in which Lilium Henryi grows 12 feet high and produces spikes which carry 50 blooms (see *Gardeners' Chronicle*, Oct. 2, 1914, p. 232), and the abundant and wonderful Roses. I have never seen Rambler Roses make more growth in the first season after transplantation than they do at Duffryn, and Mr. Cobb told me that he never hesitated to transplant them even so late as June. The long Lily canal and basin, forming the central feature of the lower lawns, contain one of the finest collections of hardy Nymphaeas in the country, and it is proposed to make a considerable extension to this during the present winter. The pleasure grounds are also to be increased by enclosing another acre or two for giving accommodation for choice trees and shrubs, both flowering and foliage species. At present the nursery ground where these trees and shrubs have been growing is very much overcrowded with uncommon plants, including many species recently introduced from China, and not at present in general cultivation. These shrubs would be capable of furnishing any number of notes, but enough has already been written to indicate the very considerable activities at Duffryn, and to prove that Mr. Cory, a keen gardener all his life, has achieved splendid results in the past twenty years, during which time he has given increased attention to garden architecture and construction. *R. H. P.*

ORCHID NOTES AND GLEANINGS.

ANGULOA CLIFTONII.

Originally imported by Messrs. Charlesworth and Co., this fine Orchid, with its large lemon-yellow coloured flowers marked with purple, received a First-class Certificate at the Royal Horticultural Society, January 25, 1910. Subsequently small lots from other importations were sold at auction under that name, and although a few of the plants closely approached the original, others varied from the lighter form shown by Messrs. Sander and Sons as Anguloa Cliftonii citrina to varieties bearing much darker markings than the type, but which were near enough to be accepted as varieties of it.

Other plants which have bloomed out of the importations have been pronounced to be forms of Anguloa Ruckeri, and a noteworthy example of this kind was shown by Mr. C. F. Waters, of Balcombe, at the last meeting of the Orchid Committee of the Royal Horticultural Society. In effect it was a dark form of A. Ruckeri, but seemed to have the peculiar elongation of the sepals as in A. Cliftonii, and in some degree the saccate arrangement of the base of the lip.

Anguloa Ruckeri was originally imported with the yellow A. Clowesii. The very dark-claret coloured form is evidently the natural type, but it always brings with it varieties varying in colour and in form pointing to hybrid origin. The Anguloa Ruckeri retusa of Reichenbach was near to A. Cliftonii, and the dark forms now flowering seem to connect the two in some way. Many more have yet to flower, and it will be interesting to compare them and endeavour to solve the problem.

CYPRIPEDIUMS OF THE CHINO-THIBETAN BORDERLAND.

Of late years there has been considerable confusion amongst Orchid-lovers as to the divers varieties of the wonderful Cypripedium family which hail from the mountain ranges between China and Thibet, this confusion having been first caused by Wilson's introduction of the remarkable tibeticum at the Temple Show in 1906. But few complete descriptions of these plants have been given to us, and those few have appeared in scattered periodicals, so that it is quite time someone endeavoured to clear up the mystery in which they are still wrapped. There appear to be eight Cypripediums growing amongst these ranges, every botanist who returns adding yet another to the tale. The latest to go to this flower paradise is Mr. Reginald Farrer, and doubtless he, too, will return with yet another; at any rate, he is sending back a delightful record of his adventures. At present the list of these Cypripediums consists of macranthos, guttatum, arietinum, tibeticum, luteum, Franchetti, margaritaceum and Wardii. Of this last I have been able to find no account beyond the mention of it by Mr. F. Kingdon Ward in his *Land of the Blue Poppy*; the name Wardii may be merely a synonym of one of the other varieties, although Ward believes himself to be the discoverer of a new plant. Macranthos (also known as macrantheum and macranthon) is the only one of them, except guttatum, which is found in Europe—namely, in Russia—and was described so far back as 1800 by Swarz. The rosy-carmine flowers, purple veined, are, in consequence, fairly well known, though not so well as their weirdness deserves. Guttatum, too, was known long ago, having been introduced here in 1829. It also has a very great range of distribution, for besides being found in the provinces of Moscow and Kursk in Russia and throughout the whole of northern Asia, the pretty, white flowers, spotted with crimson, have been found in North-Western America. Collectors describe it as preferring to grow in woods, partly shaded, usually under Birches in a soil mainly composed of half-rotten leaves, in which its rhizomes are only partly buried. Ward also discovered one of the smallest of the family, the Ram's Head, arietinum, which was formerly believed to be at home only in Canada and the most northern of the United States in company with guttatum, between twelve and thirteen thousand feet high in the Salween district of Eastern Thibet. Mr. E. H. Wilson in the *Gardeners' Chronicle*, June 24, 1911, claims that "hardy Cypripediums have recently been increased by the addition of two noteworthy species from Western China as a result of the writer's collecting work in that country." So far as cultivation is concerned perhaps he is right, but they were both known to botanists when he was quite a child, and possibly before his birth, for one of them, luteum, was discovered in 1869 by Père David; the other, tibeticum, ten years later. I have not heard of the flowering of luteum in this country, though it did so three years ago at the Arnold Arboretum, Boston, U.S.A. It is described and pictured as being very like the popular spectabile, but the flowers instead of being pink are clear yellow, yet very different to any of the other yellow kinds. Only one blossom is produced on each stem, all clear, deep yellow, with usually a few blotches of orange-brown on the face of the lip. Wilson first met with it in North-West Hupeh, where it is very rare, but later he found it in greater quantities on the Chino-Thibetan borders on humus-clad boulders and in the margins of woods up to ten thousand feet altitude. Ward, too, found plants in the Mekong valley of Eastern Thibet. When the strange tibeticum was first exhibited by Messrs. Veitch at the Temple in May, 1906, where it received a First-class Certificate, it created something of a sensation. Formerly it was identified merely as a variety of the variable macranthos (corrugatum or tibeticum), but in 1892 Mr. R. A. Rolfe admitted it as distinct. One difference is the dwarf growth, another is that the huge dark-red flowers are borne solitary on their stems. Wilson in his *Naturalist in Western China* states that "all the moorland areas are covered so thickly with these plants that it is impossible to step without treading on them" in the alpine belt between 11,500 to 16,000 feet. The same explorer appears to be responsible for Franchetti, of which he gives no description beyond the fact that the flowers are rosy-purple, but which may be but another variety of macranthos. All the plants described so far are known as the stemmed Ladies' Slippers, owing to the habit of the flowers appearing at the top of a leafy stalk, a peculiarity of the majority of the hardy kinds as opposed to the greenhouse ones, which are usually stemless. The only stemless variety of this district is margaritaceum, for which we are indebted to Mr. G. Forrest. An account of this quaint plant, together with its photograph taken at home, "growing on almost pure limestone in open Pine forest on the eastern flank of the Lichian

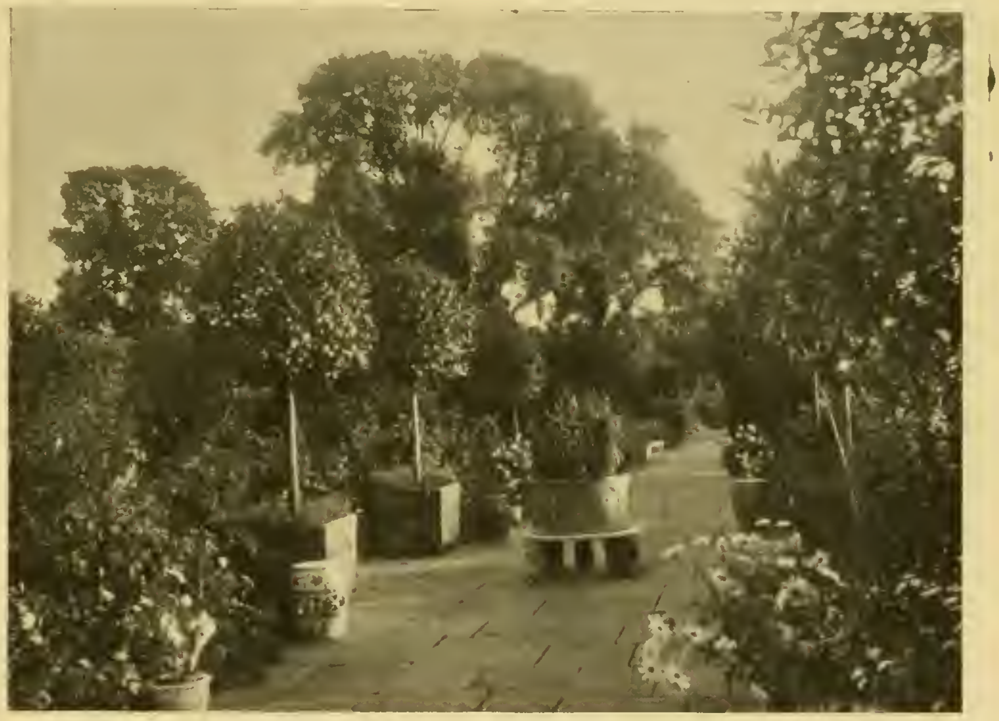


Fig. 142.—The paved court at Duffryn.

range at an altitude of 10,500 feet," appeared in the *Gardeners' Chronicle* in December, 1909. It seems in habit of growth to be somewhat like the well-known acaule, having a short stem, seldom as long as 6 inches, rising from a pair of large leaves, deeply ridged, with large, purplish blotches, hairy beneath. The fleshy flowers have yellowish segments spotted with maroon, with a labellum 2 inches long by 1 broad, pale-yellow with more infrequent blotches, and are thickly covered with shiny purple hairs. It seems to be a very rare and local plant, being only recorded from a few districts about the Mekong river. We ought to be grateful indeed to the explorers who have beautified our gardens by the introduction of these extraordinary plants and to the firms whose enterprise sent them forth. *W. Herbert Cox.*

FREMONTIA CALIFORNICA.

In many respects Fremontia californica is one of the most interesting as well as the most beautiful flowering shrubs introduced to this country from Western North America. It belongs to the Sterculiaceae order and is about the only representative of that group that can be grown out-of-doors in the average climate of Great Britain. Naturally, it is more of a tree than a shrub, and is sometimes found as much as 30 feet high. Most of the younger parts are covered with stellate hairs. Our artist informs us that the larger of these hairs, as seen under the microscope, contain a brown fluid, and that all of them stick to the fingers, and not only cause great irritation, but are difficult to remove. In these respects they very much resemble the tiny barbed prickles of some Opuntias. The great beauty of the Fremontia is in the large calyx, which is 2 to 2½ inches wide and of a bright golden-yellow. There are no petals, but the stamens, also yellow, make a conspicuous feature of the flower, being united into a short column, separating at the summit into five radiating arms, each ⅜ inch long. The seed vessel (see fig. 144 B) is conical, 1 to 1½ inch high, and is clothed with hairs. The beautiful yellow calyx does not fall away, but withers to a paper-like consistency, its five lobes enclosing the base of the fruit (A).

Fremontia californica is usually grown on a wall, and it is not hardy enough to stand fully exposed in the open near London. A plant, which ultimately became 10 or 12 feet high, grew for some years in one of the recesses of the walls outside the Temperate House at Kew and flowered profusely. The species does not, however, appear to be very long-lived in this country and is apt to die suddenly without any apparent reason. It is also difficult to transplant, and should be grown in a pot until placed in its permanent position. It flowers during June and July, and should be propagated by seeds. The material for our figure was kindly supplied by Sir Edmund G. Loder, from Leonardslee. *B.*

THE PRUNING OF FRUIT TREES.

Pruning is perhaps the most important cultural detail in the orchard or fruit garden. In regard to newly-planted trees the general aim is to obtain a full fruit crop in the shortest possible time, and this necessitates a large fruiting area in each tree. The production of a big fruiting area can be brought about by encouraging a vigorous growth the first year after planting. It matters not the type of tree, for the principle is the same with standards, bushes, espaliers, or fan-trained trees for walls or fences. Some writers tell us the trees should not be pruned the first year, but the shoots should be left intact until the second year, when they should be cut back severely. Their reason for adopting this method is that in planting the trees receive a check, and, as they argue, pruning the tree the same season inflicts another check, and to give two checks to a tree in one year is not good culture. But surely the postponement of pruning until the second year causes one year to be lost.

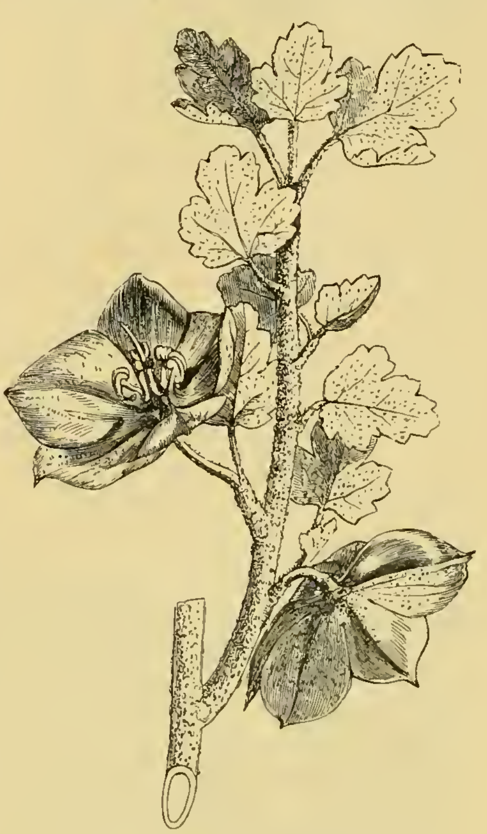


Fig. 143.—Fremontia californica.

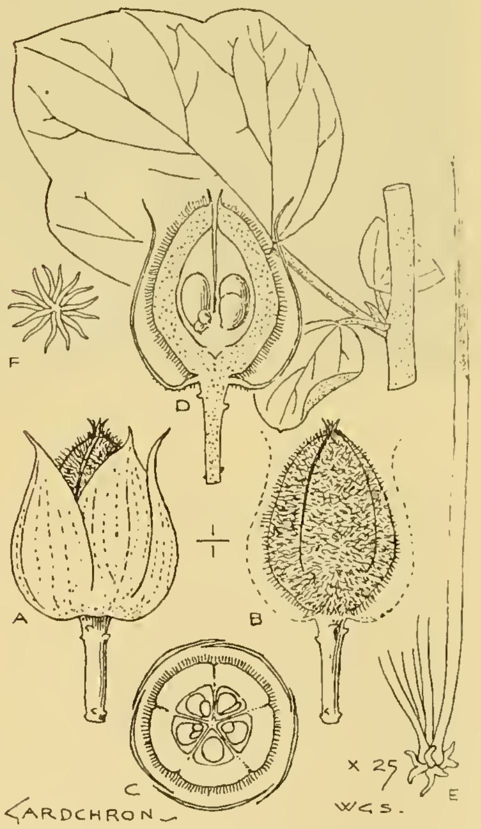


Fig. 144.—Fruit of Fremontia californica.

A, Calyx with stellate (and a few linear) hairs below; capsule seen within. B, Capsule thickly covered with downy hairs. C, Plan, showing ovules. D, Section. E, Downy hairs from capsule, X 25. F, Stellate hair from leaves.

Another person argues: Do not prune the trees at all, but allow the shoots to remain their whole length, as a crop of fruit will much sooner be obtained; or at the most take off the point of each to induce the lower eyes to push into growth. The retention of the full length of the shoots the tree was furnished with at planting time means that fruit-buds will form on these shoots instead of growth-shoots, with the exception that the leader may advance say a couple of inches.

Here, then, is a tree making no perceptible attempt to produce a large area of fruiting space, but on the contrary is covered with fruit-buds, whilst the tree itself is incapable of producing a heavy crop of desirable fruit owing to its small size and limited development.

Now the argument in favour of close pruning the first season is this. Let us assume that a standard Apple tree has half a dozen shoots 2 feet long or more. By cutting all these shoots back to within, say, 8 inches of their base there is less check to the tree than when the shoots are left intact or even with the point removed, because the recently transplanted tree has not sufficient energy to enable growth to push from all or even many of the buds contained in the shoots; the consequence is that many of the buds near the base remain dormant.

By cutting back the shoots the number of eyes is reduced and the growth the tree is capable of making is not wasted by over-distribution. The result is we obtain new shoots from 18 inches to a yard in length the first season, and, what is especially important, the shape of the tree is maintained. By encouraging strong growth the first year a foundation is laid for a full fruit crop in the near future over a wide area.

The month of February is a good time to prune trees planted the previous autumn; but if planting has to be deferred until March, then they may be pruned at the time of planting. The pruning of fruit trees planted in November should never be deferred until the sap rises, in March or early April, or the base-eyes will not readily burst into growth, it being well known that the sap rushes upwards to the apex.

The method of pruning the trees in after years depends much upon what they are required for. Pyramids or bushes for small gardens need close pruning to restrict the growth to the space available. If the growth of these trees subsequently is too vigorous to produce full crops of fruit the roots must be pruned by cutting around the trees 4 feet from the stem or by replanting, which is perhaps the better plan.

In the case of orchard trees, standard or bush, where head room is unlimited the shoots can be extended almost at will, having due regard, of course, to the variety and the shape of the tree.

So much depends upon local circumstances that it is difficult to lay down hard-and-fast rules in pruning all trees. The point is to get the main branches in their proper position and extent as quickly as possible, and then to set about getting them furnished with fruiting spurs as quickly as possible.

The maturation of the wood, old and young, is the salient point in obtaining a full fruit crop from established trees. Soft, immature growth cannot perfect specimens of Apples, Pears, Peaches, or even bush fruit. It is a common error to allow bush or standard Apple trees to have too many branches, especially the former. In many trees branches can be found that do not produce half a dozen fruits in a season, and this for many years if strict attention were given to observing how these same branches behave annually. A close observance would convince a practical man that such are useless, and if removed would be a boon to those remaining as they rob the main and better-placed branches of air and sunlight. Surplus growth should be removed by practising summer pruning in July or August. *E. Molyneux.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

VOEUX SUISSES.

Cher Monsieur,—J'ai été heureux, en ma qualité de très ancien membre d'honneur de la Société royale d'Agriculture et de Botanique de Gand et de membre fondateur de l'Association belge du nouveau Jardin pittoresque, de constater que vous avez pris l'initiative d'ouvrir vos colonnes à la cause belge. Nos amis de Belgique ont apprécié à sa juste valeur l'initiative que vous avez prise d'insérer des notes pour eux dans leur langue maternelle. Voulez-vous me permettre, puisque depuis plus de trente ans je suis votre collaborateur, d'apporter ma petite pierre suisse à cette grande oeuvre de sympathie que vous avez si généreusement entreprise? Notre petite Suisse a, dès le premier jour, ressenti très violemment le coup porté à la Belgique libre et indépendante. Victime innocente de la plus brutale des agressions, victime du monstrueux orgueil d'un peuple parvenu au faîte de la prospérité—mais qui, nouveau venu dans le cénacle des peuples prospères, n'a pas su supporter la prospérité et s'est gavé comme un affamé de tout ce que peut offrir le dieu "argent"—ce peuple si anciennement et si foncièrement civilisé a été anéanti pour un temps, volé, pillé, saccagé avec une fureur dont les peuplades les plus sauvages n'ont pas donné d'exemple. Nous autres, les Suisses, nous savons bien que si les Belges n'avaient reçu le coup c'est la Suisse qui l'aurait reçu. Il est vrai que nous sommes tous soldats et que notre armée active de 300,000 hommes bien exercés avait fait, l'an passé, une profonde impression sur le "Kaiser" lorsqu'il est venu chez nous. Mais enfin il est bien certain qu'à défaut des Belges nous aurions été mangés. Et, voilà pourquoi, nous aussi, nous avons à rendre grâces aux Belges. Aussi, dès que la première nouvelle de la violation de la Belgique nous est parvenue, la Société d'horticulture de Genève a décidé d'envoyer à sa sœur de Gand une adresse de sympathie. Notre gouvernement, à cause des vacances des Chambres, n'ayant pu le faire, plusieurs autorités cantonales, municipales et autres ont suivi le mouvement et maintenant, dans la Suisse entière, il n'y a pas un citoyen qui ne voudrait pouvoir crier pardessus les frontières : "Vive la Belgique!" Nous trouvant dans ces circonstances, je me demande comment nous, les jardiniers, qui sommes plus spécialement unis aux Belges, nous pouvons leur venir en aide. Dans tout notre pays on a accueilli et adopté des réfugiés belges. C'est par milliers qu'ils nous arrivent et que, comme vous le faites en Angleterre, on les adopte dans nos familles. Mais il s'agit ici, d'une manière spéciale, des horticulteurs et de l'horticulture. Que pouvons nous faire, vous les Anglais et nous les Suisses, pour remonter, pour ressusciter, pour redonner la vie, au commerce principal des Belges, le jour—qui est très prochain—où les Allemands seront chassés de Belgique? Il est probable qu'un nouveau "Congrès de Vienne," chargé de refaire la carte de l'Europe, attribuera à la Belgique un territoire qui ira jusqu'à la rive gauche du Rhin, afin de lui éviter le retour de semblables catastrophes. L'horticulture belge aurait alors à reconstituer sa base et à développer ses communications avec l'intérieur de l'Europe. Elle sera plus près de nous et nos relations avec elle seront plus rapides. Je voudrais que nos amis belges, qui ont, hélas, beaucoup de loisirs en ce moment, étudient la question du développement de leurs affaires du côté du centre européen. Ce que, depuis quelques années, les Allemands, très souples et très adroits, leur ont pris en fait de clientèle, les Belges doivent chercher à le reprendre. Et, s'il s'agit de former dès maintenant un Comité d'action pour la Suisse, je suis très disposé à l'entreprendre. Que nos amis belges en prennent note et qu'ils veuillent bien m'en écrire. *H. Correvon, Floraire près Genève.*

NOUVELLES DIVERSES.

Cri d'Alarme.—Dans notre dernier numéro (voir page 367) un correspondant de Gand soulignait la misère qui attend les petits horticulteurs gantois s'ils ne parviennent à vendre, à bref délai, une partie des plantes qui, par suite de la situation troublée, leur sont restées pour compte. Nous publions aujourd'hui un appel aux horticulteurs anglais pour qu'ils nous fassent connaître les espèces et quantités de plantes qu'ils seraient désireux de se procurer à Gand. Les commandes seront transmises au Dr. Van Hove, Inspecteur du Service Phytopathologique de Belgique, qui se chargera de la répartition entre les horticulteurs les plus nécessiteux.

Les Effets du Bombardement dans l'Établissement de M. De Laet, a Contich-lez-Anvers.—Nos lecteurs trouveront dans ce numéro une photographie montrant les ravages occasionnés par le bombardement de la place forte d'Anvers, dans une serre de M. De Laet, le producteur de plantes grasses, à Contich. Toutes les serres se trouvent dans le même état. Les boiseries étant à peu près intactes, il paraît évident que c'est le déplacement d'air causé par l'éclatement des bombes qui a amené le bris du verre. La maison de M. De Laet fut saccagée par les Allemands qui enlevèrent jusqu'au dernier meuble.

A la Société des Agriculteurs de France.—Dans une de ses dernières séances, le conseil d'administration de la Société des Agriculteurs de France a prononcé la radiation de quelques membres allemands qui figuraient sur ses listes. La Société n'a pas de membres austro-hongrois.

Le Marché Horticole en Hollande.—L'état de guerre dans la plupart des pays d'Europe exerce nécessairement une influence sur les prix des produits horticoles en Hollande. Il semble qu'en général les légumes d'usage courant et susceptibles de conservation aient augmenté de prix. C'est le cas des Pommes de terre, des Choux cabus blancs, des Pois et des Oignons. Ces derniers sont spécialement demandés et se vendent jusqu'à 15-16 francs les 100 kg. D'autres moins indispensables s'obtiennent à des prix raisonnables, tels les Laitues, les Endives, l'Epinard. Les fruits de verger ont été très chers toute l'arrière saison, ce qui a amené la vente des provisions, aussi une nouvelle hausse se fait-elle sentir. Les fleurs réalisent, chose curieuse, des prix à peu près satisfaisants, mais on craint la débâcle pour les produits du forçage d'hiver, qui sont normalement expédiés en grandes quantités vers les pays belligérants.

Le bon Temps Reviendra.—D'une lettre adressée récemment à un de nos collaborateurs par un chrysanthèmiste français, nous extrayons le passage suivant :—J'ai bien reçu votre aimable carte. J'ai pensé souvent à vous ces temps-ci en regardant mélancoliquement fleurir les Chrysanthèmes et en songeant que nous devrions être en ce moment ensemble à Paris et à Melun pour nous occuper de ces fleurs charmantes et non de fusils et de canons. Mais ce beau temps reviendra, grâce à notre *alliance* cordiale. J'ai fait à Marseille, où je vais fréquemment pour le service, la connaissance de plusieurs officiers anglais venus pour encadrer les Hindous. Nos affaires sont en bonne voie. Espérons un succès prochain et définitif. Hurrah pour l'Angleterre et mille amitiés.

Semences horticoles.—La Belgique employait des quantités considérables de semences potagères d'origine allemande. Il est probable qu'après la guerre les Allemands auront à chercher un débouché ailleurs. Ceux que la chose intéresse feront bien de se mettre dès à présent en rapport avec des firmes françaises et anglaises qui sont à même de fournir toutes les espèces et variétés désirables.

La Fleur au Champ d'Honneur.—*L'Echo de Paris* rapporte l'anecdote suivante qui montre combien, même aux heures de tristesse, la fleur conserve ses droits. Au cours d'une reconnaissance, écrit un soldat, nous arrivons dans un pauvre village complètement en ruines. Devant la porte de l'église, nous voyons les cadavres de deux femmes, que les Allemands avaient fusillées. Plus loin, dans un petit jardin ravagé par les obus, nous découvrons un pied de Chrysanthèmes, d'humbles Chrysanthèmes de campagne, qui seuls subsistaient dans cette désolation. Notre officier prit une fleur, et nous dit : "A Paris, bientôt, il y aura l'Exposition des Chrysanthèmes. . . . Ceux-là seront moins beaux, mais vous les enverrez à celles qui vous sont chères, puisqu'ils ont vu le feu pour de bon!" Et chacun de nous cueillit une de ces fleurs que la mitraille avait épargnées. Et voilà pourquoi, ajoute notre confrère Hugues Lapaire, qui nous a raconté le fait, dimanche j'aperçus, entre les pages dorées du missel d'une douce fiancée, l'humble fleur fanée, le Chrysanthème pâli qui porte bonheur.

La Société Française d'Horticulture de Londres.—N'ayant à présent en Angleterre que cinq membres titulaires dont 3 Suisses, un Belge et un Français trop jeune pour pouvoir prendre part à la défense du pays, ses séances mensuelles ont été suspendues temporairement à partir de Septembre. Pendant plusieurs semaines nous étions absolument sans nouvelles des Sociétaires belligérants et ce n'est guère qu'en octobre que les premières correspondances nous sont parvenues. C'est ainsi que nous avons appris depuis cette date jusqu'ici le sort de certains de nos Sociétaires tels que MM. Ripard, Maillard, André Cauchoix, Marcel Moser, Sausy, Lagrange, Montigny, et Lucien Gravereau qui, quoique remplissant leurs devoirs en bons patriotes depuis le commencement des hostilités étaient encore il y a quelques jours seulement en bonne santé. Parmi les plus âgés les Chenault, Vigneron, Barbier et Bruzeau, d'Orléans, Roger Pinguet de Tours, Détriché d'Angers, Le Clerc, et Cayeux, grainiers parisiens, sont également reportés en bonne santé. Malheureusement nous avons appris également que deux des frères de M. Philippe de Vilmorin ont été blessés; il en est de même de MM. H. Nonin, L. Millet, L. Pinguet, René Moser, mais nous sommes heureux d'apprendre aussi qu'ils sont en bonne voie de guérison. Nous regrettons infiniment de n'avoir pu jusqu'ici obtenir aucune information sur les établissements de MM. Cordonnier, de Bailleul, et Van den Heede, de Lille, ni sur les mouvements de MM. Martinet, Maumené et Chauré. La perte de nos excellents amis Cauchoix (René), Crégut, Lagouanelle, Secoufle, Sallier (Robert), morts au champ d'honneur, est pour notre Société, à laquelle ils étaient tous si devoués, un grand malheur, et une perte irréparable pour leurs pauvres parents auxquels nous adressons nos condoléances les plus sincères et l'assurance de la part que tous nous prenons à leur grande douleur. *G. Schncider, Président titulaire.*

THE ROSARY.

ROSE AMERICAN PILLAR.

On p. 289 Mr. Molyneux states that American Pillar was sent out by Conrad. This name should read Conard; it was sent out by the Conard and Jones Co., but was raised by Dr. W. Van Fleet, now of the U.S. Department of Agriculture. Dr. Van Fleet has a number of Roses to his credit, among them Ruby Queen, Dr. W. Van Fleet and Silver Moon. The last-named is especially interesting from its laevigata origin; it endured last winter in our district without protection in spite of the rigorous season (several degrees below zero).

In addition to his work with Roses and other garden plants, Dr. Van Fleet has been working for many years on cross-bred Chestnuts, in an effort to combine the excellent flavour of the American nuts with the size of the Asiatic. This has resulted in a discovery more far-reaching in effect than size of fruit, for there is reason to believe he has secured a type resistant, if not absolutely immune, to the destructive bark blight that is rapidly destroying Chestnut forests all over the United States. The immune varieties are crosses between the Asiatic Chestnut and the Virginia Chinquapin, Castanea pumila, and seedlings from these crosses. *Emily Taplin Royle, Maywood, New Jersey.*

VEGETABLES.

VEGETABLES OLD AND NEW.

It is extremely interesting if not instructive to compare the present lists of vegetable seeds with those of forty or fifty years ago. One cannot but be impressed with the very large numbers of varieties as compared with those of half a century ago, indeed, there are far too many of these so-called varieties of many kinds of vegetables, and to those who are not thoroughly versed in this branch of gardening it becomes most bewildering when making out the seed order. It would be a great boon to cultivators generally if half the number were eliminated, as they are not wanted, but old names die hard.

During my career I can call to mind vast improvements in nearly every kind of vegetable, and how much more simple it is in these days to keep up a regular supply than it was formerly. Again, in nearly every instance the quality has been greatly improved.

Though I was never in favour of large, coarse-grown vegetables, I contend that many of our improved varieties can hardly be grown too large if a proper system of cultivation is pursued. *Edwin Beckett.*

FLORISTS' FLOWERS.

INCURVED CHRYSANTHEMUMS AT NOTTINGHAM.

For a number of years the culture of Incurved Chrysanthemums has fallen off very considerably in the south of England, judging by the fewer number of blooms exhibited at the shows, but in the Midlands and North the Incurved varieties still form an important feature at the leading exhibitions. Nottingham has long been noted for the interest taken in the Incurved Chrysanthemum, and the number of classes provided for this type of the flower in the schedule is in excess of that of any other show I know; they are consistently well filled. This year's exhibition proved no exception to the rule, there being as many as 12 and 14 entries in certain classes, whilst in many of the local classes no fewer than seven prizes were awarded for these flowers. Many of the older varieties were exhibited, including Nellie S. Threlfal, which is seldom listed in catalogues now, and this variety won the prize offered for the best Incurved bloom in the show. Probably the most consistently good variety was Miss Thelma Hartmann, a blush or creamy-white variety, of large size and fine quality. *T. Stevenson.*

The Week's Work.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G., Madresfield Court, Worcestershire.

Gladiolus.—The early-flowering Gladioli should be planted extensively, as they furnish valuable cut blooms in May, June and July. They are not suitable for planting in grass, but should be grown in sheltered beds in the bulb garden. Dig the ground deeply and place a good layer of animal manure in the bottom spit. The top soil should be friable and sweet. G. byzantinus, G. Colvillii and the variety The Bride may be recommended for planting, and they are all quite hardy. The bulbs should be set 5 to 6 inches deep and the beds covered with a few dry leaves and evergreen branches until the shoots grow through the soil. If the bulbs are allowed to remain in the ground they will in time make very large clumps.

Hedges.—Well-kept hedges are a fine feature in gardens. Those of Holly, Yew, or Box should be clipped annually about July, and now is a good time to top-dress the roots with heavy loam mixed with bone-meal, first removing the weeds. Evergreen hedges such as those of Viburnum Tinus (Laurustinus), Golden Hollies and Golden Privet are a feature of the pleasure-gardens in winter, and they not only serve as wind-screens, but may be utilised to hide unsightly objects. Where hedges are used as boundaries to Rose gardens or backgrounds to beds and borders, the strong-growing shrubs may exhaust the soil where the flowers are growing, and the roots should be checked by taking out a trench 1 foot wide and 3 feet deep a little distance from the hedge, every third year. Close rows of Thuya Lobbii and Cupressus Lawsoniana make excellent tall screens, whilst hedges of Rosa rugosa and Sweet Briar are very ornamental in summer. We have a beautiful hedge formed of Golden Privet and Gruss an Teplitz Rose planted alternately. The golden foliage harmonises well with the crimson clusters of this sweet, free-flowering Rose, and the only attention the hedge requires is an occasional thinning of the Roses with an ordinary pruning-knife and a slight shortening of current year's shoots of the Privet. In planting a hedge of this character, see that the soil is prepared properly by trenching it at least two spits deep and adding a layer of animal manure between the top and bottom spits, the latter to be well broken up and pulverised. The site for the hedge should be at least 4 feet wide.

Garden Paths.—The present is a suitable time to construct new paths and renovate old ones. A fresh surface of gravel should be laid down and the path rolled firmly whilst it is soft with rain. Drains should be seen to, for the pipes may have sunk below their proper level or become choked with roots. Re-arrange the paths with a suitable camber and finish with a layer of bright, clean, fine, binding gravel. Keep the garden roller at work after rains, as this will prevent mosses and algae from growing.

Exhausted Trees and Shrubs.—Root out old, exhausted trees, for nothing gives a more depressing air to a garden than their conspicuous presence. Trench the ground 3 feet deep, adding a liberal supply of decayed vegetable matter and replant modern and improved varieties.

Lily-of-the-Valley.—When the roots are lifted for forcing, preserve the non-flowering crowns and plant them in deeply-trenched, heavily-manured soil to make new beds. The crowns should be planted about 6 inches apart and covered with about 2 inches of good soil. I find that Jannoch's variety is the best for early flowering and Fontin's Giant the best for late blooming. Solomon's Seal should be increased in a similar manner: the long sprays are excellent as cut flowers in spring.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Bouvardia.—Remove the old flowers from Bouvardias, and place the plants in gentle heat to furnish a second crop of flowers in the spring.

Violets.—The weather recently has been very unfavourable to Violets in frames, and every opportunity should be taken to tilt or remove the lights altogether during the daytime, so that the plants may get the full benefit of the light. In frosty weather it is better to spread mats or similar material over the glass than to use fire-heat, for red spider is a great pest of the Violet, and it is well known that fire-heat favours the spread of this insect. Remove all dead and decaying leaves, and stir the soil occasionally. The weather being so damp, watering should only be carried out if really necessary, taking care to apply the water early in the day, when the lights can be left open a little in order to allow the surface moisture to escape.

Tuberose.—A batch of Tuberoses should be potted every month from October onward, to provide a succession of the fragrant flowers throughout the year. The African bulbs flower earlier than those known as Pearl or American, and should be potted by this date. Remove the side growths and arrange three of the large bulbs in a 5-inch pot. Place a little sand under the bulbs and pot firmly in light, rich soil. Plunge the pots to the rims in a mild hot-bed that will furnish a bottom heat of 60° to 65°. Withhold water until growth commences, when it should be afforded in gradually increasing quantities until, when growth is well advanced, it may be applied with freedom, alternated occasionally with diluted soot water. The plants may also be fed with a concentrated fertiliser, placing a little in the water-can. Syringe the foliage until the plants are in flower. After the flowers are over the plants are of no further value.

Helleborus.—Christmas Roses respond to a little warmth and may be forced gently. Lift the clumps carefully from the border with plenty of soil attached to the roots and plant them in boxes or pots. Water the soil copiously, at the same time wash the flower shoots clear of soil and dirt. Grow the plants in a temperature of 55°. For a succession place bell-glasses over crowns in the border, to protect them from rains and frost.

Cyclamen.—The earliest seedlings are ready for transplanting in pans 4½ inches deep. Place plenty of drainage materials in the receptacles, and fill them with a light, sandy compost. Lift the young corms carefully and set them 2 inches apart; but do not bury them below the surface. During the winter they should be grown in a temperature of 60° to 65°. Syringe overhead on fine mornings and fumigate the house directly thrips or red spider are detected. The seeds germinate irregularly, therefore the seed-pans should be retained for some time after the first seedlings are pricked off. Later batches of one-year-old plants may be brought in the plant houses from the pits and placed on staging close to the roof-glass. The houses should be light and have a temperature of 60° at night.

Begonia Gloire de Lorraine.—The earliest plants are passing out of flower and should be removed from the show house. Place them in a house having a temperature not lower than 65° at night and rest them for a short period. Afterwards cut the shoots back to about 9 inches above the pot, when the plants will start into growth, these secondary shoots being suitable for cuttings. Later plants may be fed with weak soot-water. This treatment is also suitable for the other race of winter-flowering Begonias. If mites are present dip the foliage in a nicotine preparation. The variety Gloire de Sceaux flowers in succession to Gloire de Lorraine, and when clean and free from thrips are very handsome plants. Continue to feed the roots with weak liquid manure and soot-water and fumigate the house at intervals with a nicotine preparation.

Forced Flowers.—Certain bulbs are sufficiently rooted to be introduced into heat, which should be only moderate at first. Retarded Lily-of-the-Valley requires from eighteen to twenty-five days to develop the flower-spikes. Early Tulips should be covered with moss or inverted pots to cause the flower stems to grow long. Spiraea astilboides takes a considerable time to flower, and forcing must be gradual at first. Place shallow pans of water underneath the pots when growth is advanced, to keep the roots moist.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson, Oakwood, Wylam-on-Tyne.

The East-Indian House.—The various species of Aërides, also Vanda tricolor and its allies, have now ceased to develop roots, and need only sufficient moisture during the next few weeks to keep the leaves plump. The house should be kept rather cooler than hitherto, and air should be admitted freely through the lower ventilators whenever the weather is favourable. There are two forms of Angraecum sesquipedale in cultivation; one flowers late in the autumn, the other during the summer. Both require to be grown in a warm house and a moderately humid atmosphere at all seasons. In such conditions, even in winter, the roots must never be allowed to become dry, and if the plants are grown entirely in Sphagnum-moss, from which moisture evaporates rapidly, there will be little danger of over-watering. Peat and Osmunda fibre keep damp for a long time, and when these materials are employed for compost, watering to excess may result in the leaves becoming injured and disfigured by black spot. Angraecums of the smaller - flowered section, which bloom during the winter and early spring, should be grown in the same conditions at this season as Phalaenopsis. The small species should be placed within a reasonable distance of the roof-glass. If grown in shallow pans or baskets the plants may be suspended from the roof rafters, and, as most of the flower-scapes are pendulous racemes, the flowers will show to the best advantage. Watering must be done with great care at all times and a close observation kept for the presence of scale, thrips and other insect pests. The evergreen Dendrobiums have completed their growth and should be placed in a very light position. Keep the atmosphere cooler and drier than hitherto. Careful attention to D. thyrsiflorum and its allies during their dormant season will make all the difference when the flowering season arrives, not only in the number of flower-scapes produced, but also in the quality and texture of the flowers. If the house is kept reasonably cool, the roots will require but very little moisture when the plants are resting.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of Haddington, Tyninghame, East Lothian.

Onions.—Large bulbs badly matured are apt to rot at this season, therefore examine the stored Onions carefully with a view to removing any affected by rot or which are very soft. Onions keep best when the weather is consistently cold and the bulbs of a medium size. This year the weather has been too mild, and losses may be expected, at least among the larger bulbs. Exhibitors will shortly be making preparations for next year's crop. There is no better way of raising early plants than by sowing thinly in boxes. The compost for seed boxes should be at this season very open, and may consist of two parts loam to one of flaky leaf-mould. Once watered this material retains moisture for a long time, and the roots grow freely in it.

Forcing Herbs.—No herb is easier to force than Mint, for roots placed in water and in a slight warmth make free growth. Arrange the stolons on a thin layer of light soil laid in the bottom of a box and cover the stolons with another layer of soil about 1½ inch in depth. Tarragon for forcing should be lifted, placed in pots, and allowed to develop slowly. I have had to force Fennel on occasions, and I have found that the roots of this herb do not lift at all well, and where Fennel is required out of season, it is preferable to grow plants from seed, allow the tops to die down, and, after a frost, force the plants in a warm house or pit.

Early Potatos.—The tubers are usually started about this date, after being prepared so that each has a strong break with a few roots. The plants should be grown in 10-inch pots, and these need not be filled more than three parts with soil, the tuber, with its growth, being barely covered for the present, to allow for fresh compost to be added from time to time. Potatos may be forced in a recently-started vinery or Peach-house. An important detail is not to use the water-can too freely until plenty of roots have formed.

Seasonable Work.—Usually most of the ground is cultivated before this date. I do not, as a rule, manure the ground until the spring, but take opportunities when frost has hardened the surface to wheel the manure on the land. There is much diversity of opinion regarding the amount of manure a garden should receive annually. A great deal depends on the soil and also on the methods of cultivation. Ground in "good heart" can be kept fertile by means of small additions of manure from time to time. If, however, the soil is impoverished, heavy dressings must be used. In such cases I have applied forty tons per acre with much advantage. Though the manure is wheeled on the land now, it is not necessary to incorporate it with the soil at present; but it should be spread equally over the surface as soon as convenient. Decayed leaves are of much benefit to heavy soils in helping to form a layer of material amenable to cultivation. Old Pea haulm, Cabbage refuse and such-like material are also of appreciable benefit in supplying humus to the staple.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Cordon Gooseberries and Currants.—The cordon method of training Gooseberries and Currants is to be recommended for various reasons. The fruits grown on cordon trees are of the finest quality, whilst a number of early, mid-season, and late varieties may be grown on a small length of fence or wall, thus ensuring a long succession of berries, especially if late varieties of both are planted on cool walls. Moreover, the fruits can be easily protected from birds, and may be gathered by those who prefer to pick for eating direct from the trees.

Renovating Old Orchards.—Whether the trees in neglected orchards should be grubbed up or an attempt made to bring them into a profitable condition again depends on their condition. If they are fairly vigorous in growth they will respond quickly to good treatment, and the present is a suitable time to undertake the work. In pruning neglected trees first clear the centre of all dead and worthless shoots. Branches crossing each other should then be sawn out, the object being to have the growth sufficiently thin to permit of the sunshine and air reaching all parts of the tree. The workman must be guided by the habit of the variety as to the amount of wood to remove. If the tree is of upright, sturdy growth, it is a simple matter to thin out the shoots; but when the tree is of pendulous habit, it is often a dense thicket of small, dead, or weak growth, and these must be cut back to the main stem, leaving only strong, healthy growth to furnish the tree. Trees of inferior varieties, if fairly healthy and vigorous, should be headed down for re-grafting with a better sort next spring. Sometimes a local variety may be worth retaining when the tree is doing well; but all worn-out or badly-cankered trees should be grubbed up. It is not good practice to plant on the same sites again; but if there is no choice in the matter the old soil should be removed and the young trees planted in fresh compost. All prunings should be burnt, for this will result in the destruction of many insect pests and their eggs. When the work of pruning is completed, cleanse the trees thoroughly of moss and lichens. The old practice of covering the branches with slaked lime on a damp day does much good, but spraying with a winter wash is much more effective. One of the best sprays for neglected trees is concentrated alkali wash. After using this specific annually for nearly twenty years, I can thoroughly recommend it for the purpose, having always found it most efficacious in cleaning fruit trees. Care must be taken to wet every part of the tree, and in bad cases the operation should be repeated in the spring. The ground should be cultivated, digging in the top-spit and applying a good top-dressing of manure. The sooner this kind of work is completed the sooner will the tidy appearance of the garden be restored.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Peaches and Nectarines.—Proceed cautiously in the forcing of trees with swelling buds, for success depends essentially upon the organs of fructification being allowed time to develop gradually. Trees for very early fruiting should be grown in a maximum temperature of 50° by day and 40° to 45° at night until the end of the present month. After December a little fire-heat may be employed, but proceed cautiously in this respect until the days begin to lengthen. Guard against pot trees becoming dry at the roots, especially the earliest ones with buds swelling fast. Cool houses and cases should be ventilated freely, otherwise the buds may swell too rapidly and be liable to injury by severe frosts later. Trees in succession houses that appear to lack vigour should be stimulated by replacing as much of the old soil as can safely be removed without injuring the roots by rich, fibrous loam, mixed with a moderate quantity of well-decayed manure and lime rubble or crushed bones. Worn-out trees should be removed and replaced by trees of a fruiting size from open walls or cases. Trees of almost any size may be removed with perfect success, and without the loss of a crop, if the work is done carefully.

Pines.—The directions given in the calendar for November 21 respecting the different compartments should be followed during the present month. A steady temperature is necessary, and other important details are care in watering and ventilating. Water must be given sparingly at this season, as the plants are partially resting. Air should be admitted on all favourable occasions, provided the temperature of the pit is not too low. If blinds or similar materials are used to cover the roof at night in order to economise fire-heat, remove them early in the morning to admit the light. Should snow cover the roof-glass this must also be removed at intervals during the time it is falling.

Vines.—The work of pruning Vines in successional or second-early houses must receive immediate attention. In the case of Vines that are known to bleed when the sap begins to rise, the ends of the spurs should be dressed with a styptic. As soon as the work of pruning and cleansing the Vines is completed, cleanse the interior of the house and renovate or top-dress the borders.

Tomatos.—Make a sowing of an early-fruiting variety such as Earliest of All or Sunrise. Place the seed-pan on a shelf near to the roof-glass in a house having a temperature of about 65°. If the seed is sown thinly, the seedlings may be allowed to develop four or five leaves before they are potted singly in small pots. Plants in fruit must be watered very carefully and air should be admitted on all favourable occasions. Maintain a night temperature of 55° to 60°, and 4° or 5° higher during the day. Feed the plants in moderation at frequent intervals, especially those that are carrying large crops of fruit.

Materials for Potting.—Collect and place under cover such materials as loam, leaf-mould, decayed cow manure, and burnt vegetable refuse that will be required after the turn of the year for planting such crops as Cucumbers, Melons and Tomatos. Make a stack of turves cut from an old pasture, and as each layer is arranged sprinkle fresh soot over it, or if wireworms and other ground pests are present use a ground insecticide such as Fumite. If the heap is made in the open it must be covered with sheets of corrugated iron or some other material that will ward off heavy rains and snow.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DECEMBER 12—
London Vegetarian Assoc. Bazaar and Meeting, in Memorial Hall, Farringdon Street, at 3 p.m.

TUESDAY, DECEMBER 15—
R.H.S. Coms. meet. Broughty Ferry Hort. Assoc. meet.

THURSDAY, DECEMBER 17—
Linnean Soc. meet.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 40.4.

ACTUAL TEMPERATURES :—
LONDON, *Wednesday*, December 9 (6 p.m.): 45°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London: *Thursday*, December 10 (10 a.m.); Bar. 29.0; Temp. 46°. Weather—Raining.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—
Rose Trees, Shrubs, Bulbs, and Perennials, at 12.30, at Stevens' Rooms, 38, King Street, Covent Garden.

MONDAY—
Dutch Bulbs, Hardy Herbaceous, and other plants, by Protheroe and Morris, at 67 and 68, Cheapside, E.C., at 12.

TUESDAY—
Clearance sale of Greenhouses, Piping and Sundries, Plants, etc., at Grove Road Nursery, South Woodford, by Protheroe and Morris, at 12.

WEDNESDAY—
Dutch Bulbs, hardy Herbaceous, and other plants, by Protheroe and Morris, at 12.
Ferns, Asparagus, Roses, etc., at 11. The beneficial interest in the Lease at the Stockwell Nursery, Cheshunt, by Protheroe and Morris, at 2.30. Bulbs, Roots, etc., at 12.30. 1,092 cases Japanese Liliums at 3.30, by Protheroe and Morris.

THURSDAY—
Roses, by Protheroe and Morris, at 1.

FRIDAY—
Dutch Bulbs, Hardy Border and other plants, Roses, etc., by Protheroe and Morris, at 12.

Sap-Density and Frost.

Anyone who has observed plants in winter is aware of the fact that in a general way the sappier the plant the more liable it is to injury from frost. But the known facts concerning the relative hardiness of different kinds of plants suffice to show that some plants, despite their sappiness, are hardier than others that are less watery.

It follows, therefore, that the power of resisting frost is not determined solely by the density of the cell-sap. Into the general question of frost-resistance we do not propose to enter now, for the reason that nothing more is known than was the case when we treated of this interesting subject some years ago. (See *Gardeners' Chronicle*, Feb. 19, 1910, p. 120.) Recent observations and experiments made by Mr. W. W. Ohlweiler in the Missouri Botanical Garden tend in a measure to show that within a given genus there is a parallelism between sap-density and frost-susceptibility, and that the plants with a denser, more concentrated cell-sap are the more resistant to frost. These conclusions were reached by comparing the results of two sets of observations, one on the effects of frost on several species of a genus grown in the open, the other on the actual density of the cell-sap of these species. The latter observations were made by determining the freezing-points of the expressed saps, it being a well-established fact that the denser the sap the lower is its freezing-point. On collating the two sets of observations, made with different species of Magnolia, a fairly good agreement was found to obtain between them; that is, the plants most tender in the open were those which have the most watery sap, and the most frost-proof plants those with the densest sap. Thus of Magnolias—M. stellata, M. Kobus, which showed no injury from frost in the open, have a denser sap than have Magnolia acuminata and M. Yulan, the leaves of which were entirely killed by the frost which left the first-mentioned species unharmed. Such plants as Magnolia Soulangeana, M. ovata, M. discolor, M. obovata purpurea, which are intermediate with respect to frost-susceptibility, are also intermediate in sap-density. Certain species, however, fail to fit in with the scheme: thus M. grandiflora, which suffered most from frost in the open, has a denser sap than have several of the species which fall into the intermediate group, and M. Lennei (a hybrid), though more susceptible to frost than are M. cordata, M. Kobus, or M. stellata, is of all the 12 Magnolia species tested the one with the densest sap.

Antiseptics and Soil Micro-Organisms.

It is a fact so frequently verified as to be beyond dispute that partial sterilisation of the soil either by heat or by antiseptics results generally in an increase of the crop grown in the soil.

To account for this phenomena Russell and Hutchinson put forward the hypothesis, based on careful experimental work, that the effects of sterilisation are twofold; first, to kill off certain bacteria normally present and active in the soil, and so to reduce for a time the total bacterial flora of the soil; second, to destroy the minute animals (protozoa) which normally make a living by feeding on soil-bacteria. As a consequence of the destruction of the protozoa the surviving bacteria, particularly those which produce ammonia, are free to increase and multiply without let or hindrance.

This engaging theory has been subjected recently to critical examination by Mr. P. L. Gainey, who publishes his results in the 23rd Report of the Missouri Botanical Garden. Mr. Gainey's experiments lead him to doubt the validity of certain of the conclusions reached by Messrs. Russell and Hutchinson. Thus he finds that the application of small quantities of carbon disulphide, toluol, or chloroform—substances used for effecting partial sterilisation of soils—have no appreciable effect on the number of protozoa present in the soil. Moreover, this observer finds, contrary to the conclusions reached by the English workers, that small quantities of these antiseptics exert a stimulative rather than a depressing effect on the number of soil bacteria, and that the marked increase of yield which may follow on the application of the antiseptic may occur even though no change in the total number of soil-bacteria be observed.

Apart from matters of interpretation, Mr. Gainey's experiments have a very practical issue in that they show that in his comprehensive greenhouse experiments partial sterilisation by heat gave, in the case of Oats, a far bigger yield than was obtained either by complete sterilisation or by partial sterilisation by antiseptics (toluol). In the case of Buckwheat, however, the biggest yield was obtained from the plot treated with carbon-bisulphide at the rate of about 20 cubic centimetres per square foot.

ROYAL HORTICULTURAL SOCIETY.—The last meeting of the committees for the calendar year will be held on Tuesday, the 15th inst. The secretary informs us that the meeting for the 15th inst. is not entered in the *R.H.S. Gardeners' Diary*, for the reason that when the diary was printed in September, 1913, the Council had not definitely decided to hold a show on that date. The first meeting in the New Year will be held on Tuesday, January 5.

THE EARL OF STAIR.—By the death of the Earl of STAIR at Oxenfoord Castle, Dalkeith, Scotland has lost one who took a warm interest in the localities in which his estates were situated. In addition to Oxenfoord, the Earl of STAIR had extensive properties in Wigtownshire, where his residence was Lochinch Castle, adjoining the old family seat, Castle Kennedy. The time he devoted to public business prevented him from engaging deeply in horticulture and forestry, but he saw that the magnificent grounds and policies at Lochinch and Castle Kennedy were well maintained. Under the more direct management of the Hon. HEW DALRYMPLE, they were kept in perfection and the fame of Castle Kennedy for its trees was upheld. The Earl of STAIR showed his interest in the burgh of Stranraer, of which he was Provost for six years, by presenting the inhabitants with a public park. He is succeeded by his only son, Viscount DALRYMPLE, M.P., who is at present a prisoner of war in Germany, and who is devotedly attached to gardening and forestry.

THE LAWRENCE MEDAL. — The Lawrence Medal, established in 1906 out of the funds subscribed by the Fellows and friends of the Royal Horticultural Society as a recognition to the late Sir TREVOR LAWRENCE, Bart., K.C.V.O., V.M.H., of his long tenure as president and of the invaluable services he had rendered to the society, has been awarded for the year 1914 to Sir EVERARD A. HAMBRO, K.C.V.O., Hayes Place, Hayes, Kent (gr. Mr. J. Grandfield), for the excellent cultivation and staging of an exhibit of Saxifrages and rock plants at the society's forced bulb show on March 10.

SEEDLING APPLE.—Mr. MCKEOWN, Julianstown, Drogheda, sends us samples of a new Apple which he describes as being a cross between the varieties Bismarck and Bramley's Seedling. It is a large fruit of unattractive appearance, measuring, over eye and stalk, 11 inches, and in circumference 12 inches. The stalk is set in a wide, funnel-shaped basin and is very short and thick, being considerably less than the cavity in which it is inserted; the cavity is thickly covered with russet. The eye is large and open, set in an unusually large and irregular cavity, which is divided into corrugations that have a distinct effect upon the shape of the fruit, making it six-sided. The skin is pale, greenish-yellow throughout, and the entire surface is covered with small spots of russet colour. It has very white flesh and cooks well. Our correspondent intends to name the Apple in honour of Mr. J. E. REDMOND, M.P.

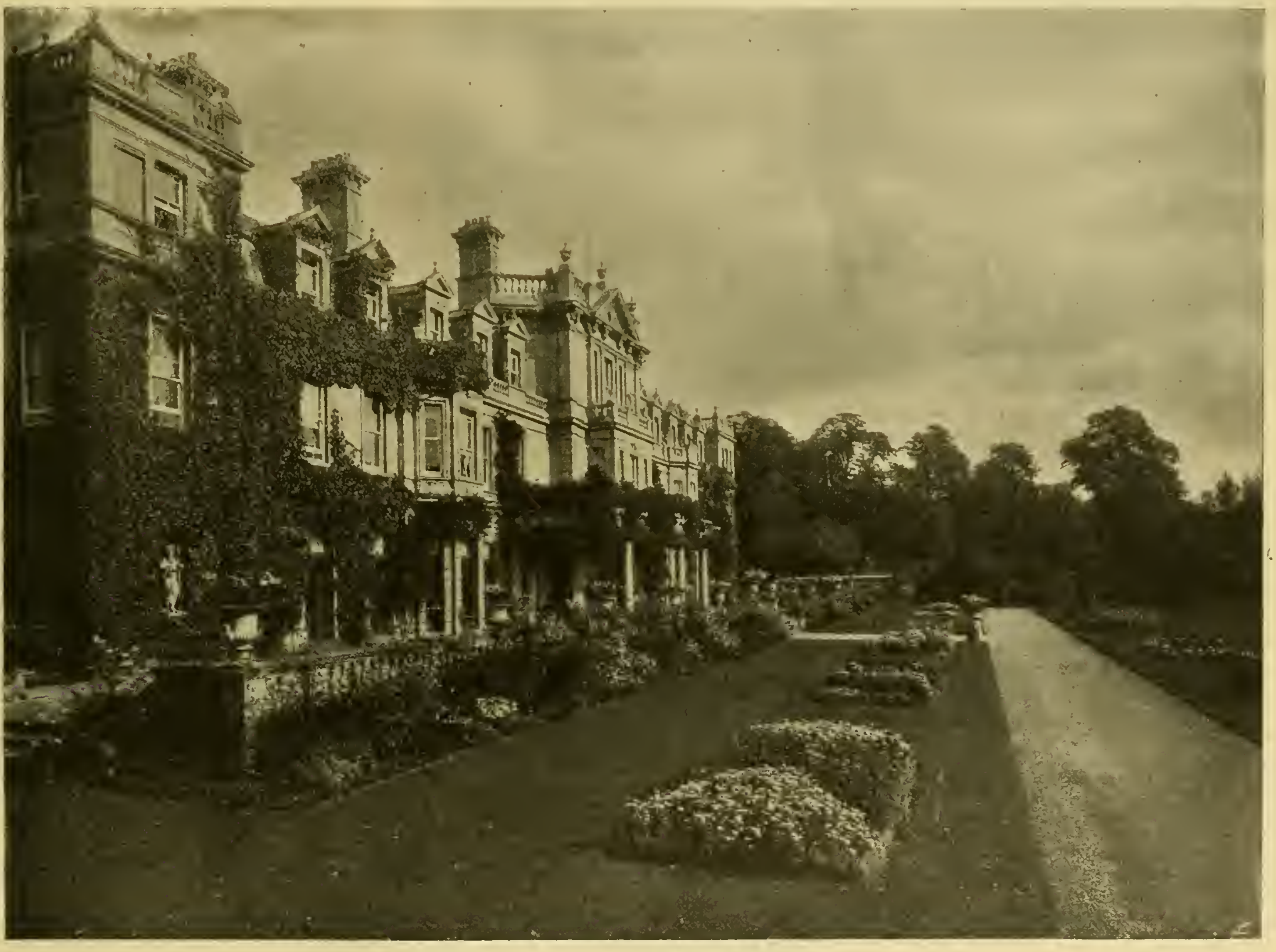


FIG. 145.—DUFFRYN, SOUTH WALES: THE RESIDENCE OF REGINALD CORY, ESQ. (See p. 379.)

SOUTH-EASTERN AGRICULTURAL COLLEGE, WYE.—A meeting of the Governors of the South-Eastern Agricultural College, Wye, was held on the 30th ult., under the chairmanship of Lord ASHCOMBE. The Principal, Mr. M. J. R. DUNSTAN, reported that 110 students and 13 members of the teaching staff, besides college servants, farm and garden employees, had joined the colours. The number of students in attendance at the college was 79, including 31 special one-year-course students, for whom scholarships were provided by the Kent Education Committee. The new college buildings have been completed at a cost of £12,500, towards which the Board of Agriculture have given £6,000, whilst two grants, each of £500, have been made by an anonymous benefactor towards the completion of the research equipment, and these gifts have been met by equivalent grants from the Board of Agriculture. The probable financial position of the college owing to the reduction in the number of students was considered, and it was decided to bring the matter before the Government educational and agricultural departments before taking any definite steps to curtail the teaching or research work. A vacuum drying plant for experimenting on the drying of fruit and vegetables has been installed by means of a grant from the Board of Agriculture, and it is hoped that assistance may be forthcoming to continue the investigations into the economical feeding of dairy cows, of which a third report has just been issued. Results which may prove to be of considerable practical value have been obtained from the Hop-breeding experimental work.

TREE PAEONIES IN CHINA.—According to a recent Bulletin issued by the Department of Agriculture, U.S.A., the department has received from Tsao-chou fu, Shantung, China, numbers of tree Paeonies, among which are yellow, blue, green, and even black-flowering varieties. The soil best suited to these tree Paeonies is, according to the *Florists' Exchange*, a loose porous, sandy loam, with perfect drainage and of great depth. In the district to the north-west of Tsaochou the soil and climatic conditions are such as seem to suit this Paeony to perfection. The plants are grown there in fields as regular crops, and are sent all over Eastern China, going so far south as Canton, and as far north as Mukden, to be used mainly for forcing purposes. There are said to be more than 300 varieties in cultivation. The best time for transplanting is considered to be September, and propagation is effected through division.

MR. GEORGE FORREST RETURNING FROM CHINA.—Mr. GEORGE FORREST wrote us on October 8 as follows from Gnu-lu-kay, Lichiang Range, N.W. Yunnan, Upper Burmah :—"All being well, I have arranged to sail from Rangoon for England about the middle of next January. Leaving here on my return journey to the Burmese frontier about the first of next month, I hope to be in Bhamo towards the end of December. The *Gardeners' Chronicle* has reached me regularly during the three years of my sojourn here, and very interesting and instructive I have found the contents. It has indeed been a boon to me."

THE PRODUCE MARKET IN HOLLAND.—The state of war which exists throughout most of the European countries is having, quite naturally, an effect on the prices of fruit and vegetables in Holland. Ordinary vegetables, which are capable of being preserved, have risen in value, notably Potatos, white Cabbages, Peas and Onions. These latter vegetables are especially in demand, and are selling at from 15f. to 16f. for 100 kgs. Other less indispensable products can be had for reasonable prices, such as Cauliflowers, Lettuces and Spinach. Orchard fruits have been very dear all the autumn. Flowers, curiously enough, are realising somewhat more satisfactory prices than could be expected. It is feared that it will be difficult to find a sale for forced produce during the winter, as it is usually exported in large quantities to the countries now at war.

THE REV. DAVID R. WILLIAMSON, minister of the parish of Kirkmaiden, Wigtownshire, has resigned his charge on account of failing health. Mr. WILLIAMSON takes a special interest in Lilies, Roses and Sweet Peas, and his garden at Kirkmaiden contains good collections. As may be gathered from his writings. Mr. WILLIAMSON is of poetical and musical tastes. His poems have been published in collected form and are characterised by delicacy of expression.

WAR ITEMS.—Everybody interested in Cactuses knows M. F. DE LAET, of Contich, near Antwerp. Enclosed is a photograph (see fig. 146) of his eighteen glasshouses as they stood in August last. The district was involved in the recent bombardment of Antwerp, and the result on M. DE LAET's glasshouses is shown by the photograph reproduced in fig. 147. All the rest are in the same condition. It will be seen that the woodwork is for the most part intact, but practically the whole of the glass was destroyed by the concussion caused by the bombs. The Germans looted the whole of the contents of his house, so that nothing but the bare walls remains. *Frank Crisp.*

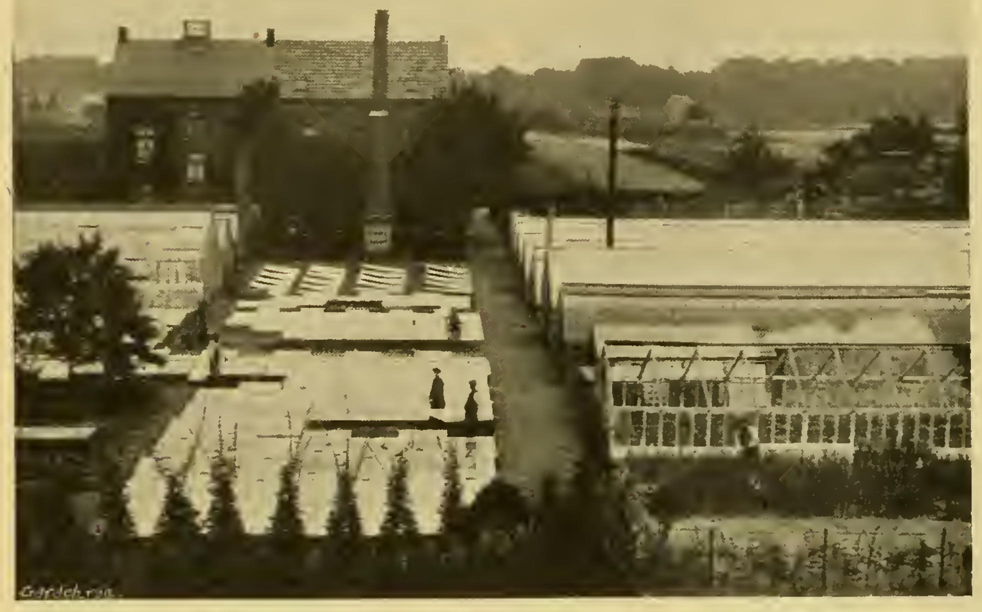


FIG. 146.—M. F. DE LAET'S NURSERY AT CONTICH, NEAR ANTWERP.
(From a photograph taken early in August.)

—— In the French page of our last issue (see p. 367) we published a letter from Ghent in which our correspondent described the sad losses that have overtaken the smaller horticulturists in the Ghent area. Many growers will be ruined if they are unable to sell the plants which at present fill their glasshouses. Large quantities of Begonia bulbs, Kentias and other Palms, Araucarias and Azaleas are available, but there are no purchasers.

—— All questions relating to the purchase and export of food supplies, munitions of war, and field equipment, for the French, Belgian, Russian and Serbian Governments are now dealt with by the International Commission for the Purchase of Supplies (Commission Internationale de Ravitaillement). The executive office of this Commission, and the offices of the French, Belgian and Serbian delegates thereon, are at India House, Kingsway, W.C., while the offices of the Russian delegates are temporarily at 192, Cromwell Road, S.W. Application for permission to export goods the export of which from the United Kingdom is prohibited, should, if such goods are required by the Allied Governments or their accredited agents, be addressed in writing to the Commission. The Commission will only consider such applications if they are accompanied by documentary evidence as to their official origin. Applications which are unsupported by such evidence, or applications in respect of goods which are ordered by private firms for purely industrial purposes, must be made in the ordinary manner to the Commissioners of Customs and Excise, Lower Thames Street, E.C. Owing to the possible shortage of certain classes of goods for which there is a great demand, it may be found impracticable to make any exception to the prohibition against the export of such goods. Consequently merchants and manufacturers wishing to supply goods for the use of any of the Allied Governments are warned not to enter into any negotiations until they have ascertained from the Commission Internationale de Ravitaillement that permission for the export of such goods will be granted. Having granted permission to export the Commission will make the necessary arrangements direct with the Customs authorities for the clearance of the goods upon receiving from the manufacturer or merchant *at least* 48 *hours'* notice of each shipment, together with the following particulars :—(1) Nature and quantity of goods to be shipped. (2) Name and address of consignor. (3) Name and address of consignee. (4) Port and approximate date of shipment. (5) Ship or line by which shipment is to be made. (6) Port of discharge. (7) Marks on packages, if any.

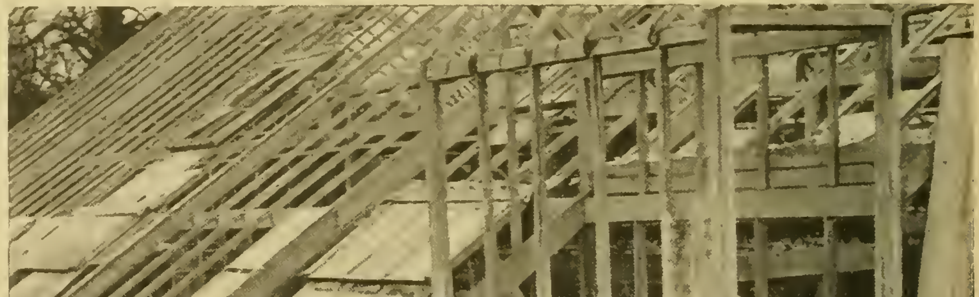


FIG. 147.—A HOUSE IN M. DE LAET'S NURSERY AS IT APPEARED AFTER THE FALL OF ANTWERP.

—— The severe fighting at Ypres during the past few weeks has several times caused us to wonder what had happened to M. VALERE BOUCKENOOGHE. At the Carnation show last week we were agreeably surprised to meet him in person. He is well, and has been staying in London for the past few weeks. His house has been pillaged and his nursery destroyed by the invaders. M. BOUCKENOOGHE is well known as a Carnation grower and is an old Kewite. His many English friends will rejoice to know that he is safe amongst us. M. E. DRAPS-BOUDRY, of Oost-Dunkerke, is also safe and sound, and was also at the R.H.S. Hall on the occasion of the Carnation show. We are glad to be able to record that news has been received that so late as November 28 M. AD. BUYSSENS, Professor at the Vilvorde State School of Horticulture, was alive and well, and at his home there. M. BUYSSENS is well known in England, and was one of the jurors in the science and education exhibits at the Royal International Horticultural Exhibition at Chelsea in 1912.

—— Mr. JOHN STEWART, fruit merchant, Dunfermline, has received an intimation that his eldest son David has been killed in action.

—— We learn from M. CH. MARON, of MM. C. MARON ET FILS, Orchidists, of Brunoy, France (see French page, 383), that his second son, ERNEST, has been with the army since the beginning of the war and is uninjured. M. MARON's son-in-law, Lieut. MAURICE CHARLES, was unfortunately wounded several months ago. He is now somewhat better and has been sent to Heidelberg. M. MARON states that M. H. MARTINET, editor of *Le Jardin*, although exempt from further military service, has been accepted at his own request in his former position of captain of artillery.

—— As the result of the show held by the Dulwich Chrysanthemum and Horticultural Society, on November 12 and 13, a cheque for £81 has been sent to his Worship the Mayor of Camberwell, to be divided as follows:—£45, the proceeds from the sale of tickets, to H.R.H. the Prince of Wales' National Relief Fund; £36, the proceeds from flowers sold and other sources, to be equally divided between the local branch of the British Red Cross Society and the Belgium Relief Fund.

Duthie Park, Aberdeen.—We learn from the *Aberdeen Daily Journal* that considerable alterations and improvements are in progress at the Duthie Park, Aberdeen. Additional flower-beds are being formed at the part adjoining the Deeside railway to the west of the Polmuir Road entrance. There are other alterations in progress, such as the re-arrangement of the park at certain places, the trimming of trees, the building of terraces south of the glasshouses, and the thorough utilisation of the low-lying ground sheltered from east and north winds by high walls and having a southern exposure. The centre plot of the Palm house has been rearranged. More room for plants in the house has been obtained by the erection of a low staging next to the glass round the building.

Royal Meteorological Society.—A meeting of the Royal Meteorological Society will be held at the Surveyors' Institution, 12, Great George Street, Westminster, on Wednesday, the 16th inst., at 7.30 p.m. Papers to be read: 1. "Distribution of Relative Humidity in England and Wales." By W. F. Stacey. 2. "Observations of the Upper Atmosphere at Aberdeen by Means of Pilot Balloons." By A. E. M. Geddes, M.A.

Adair Place.—We learn that this estate, which was the subject of an illustrated notice in the *Gardeners' Chronicle* for Nov. 16, 1912. p. 363, has been purchased by W. H. Hartley, Esq., who contemplates various improvements. The services of Mr. V. Holder, for some years gardener to Mrs. Adair, at the same place, have been retained, and it is still intended to make Carnations the chief feature of the glass department.

Eastbourne's Public Gardener.—Mr. Joseph Smith, gardener to the Eastbourne Corporation, has served the town for thirty-seven years. He is in his eighty-second year, and, with a view to lightening his duties, the Corporation has appointed him consulting head gardener, and another head gardener is also to be appointed. Mr. and Mrs. Smith celebrated their golden wedding on April 3, 1911, and the public then presented Mr. Smith with an illuminated address and a purse containing £42 12s., and Mrs. Smith a framed photograph of the planting of an Oak tree in Gildredge Park by Lady Vesey Strong, the then Lady Mayoress of London, in commemoration of the town becoming a county borough.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Henry J. Clayton Memorial.—In March last you kindly permitted me to formulate the proposal in your columns that the many friends of the late Mr. Henry J. Clayton, who was for many years gardener at Grimston Park, should unite in raising a memorial to his memory in connection with the Royal Gardeners' Orphan Fund, of which he was one of the original promoters and subsequently one of its most strenuous supporters. As the result of that appeal I have had the pleasure of handing over to the treasurer of the Fund the sum of £50, together with a list of the contributors, all of whom will, I am sure, be gratified to know that a permanent memorial to Mr. Clayton's worth as a gardener and of his good work in connection with the Orphan Fund is thus assured for all time. I would wish also to be permitted to express my hearty thanks to all who have thus helped to pepetuate the memory of our old friend in the way that I know would be most dear to his heart. *T. Turton, Hon. Secretary and Treasurer, The Castle Gardens, Sherborne, Dorsetshire.*

Cyaniding for Insect Destruction.—The advent of cooler weather and the approach of the resting season for plants and fruit trees under glass affords the most suitable conditions for cyaniding, because most of the injuries that have resulted from the use of this gas are attributable to high temperatures or to the presence of young growths on the plants; that it is the most effectual means we have for exterminating insects is well known, and the proportions and ingredients necessary have often been mentioned in the *Gardeners' Chronicle*, but I have never seen any periods mentioned for repeating the dose. Say, for instance, with red spider, how long are the eggs of this insect before they hatch under favourable conditions? and with mealy bug the same question may be asked. If we knew these times extermination would appear to be comparatively easy at this period of the year, because suitable conditions could be given for hatching during brief periods. It is well known that no vaporising compound will destroy the eggs of insects, and a close study of the life-history from egg to adult is necessary. *W. H. Divers, V.M.H., Belvoir Castle Gardens, Grantham.*

Unseasonable Flowering.—The present season has been remarkable, since it has apparently induced a number of shrubs and plants to flower at a time when they generally are destitute of bloom. A splendid specimen of Bowkeria Gerardiana over 10 feet in height and as much through, probably the largest in the British Isles, flowered profusely in August and is now bearing blossom again. I send two flower-sprays for your inspection. The great shrub is also covered with unexpanded buds, so that if we do not experience hard weather it should be in full flower by Christmas. Callistemon salignus, which bears its crimson, bottle-brush like flowers in abundance in May and June, has for the first time in its existence developed into an autumn flowerer and is now, at the end of November, carrying over three dozen fully-expanded flower-heads. The rather uncommon Medicago arborea is also now again in bloom, and the Mexican Abelia floribunda, which was covered with blossom in the spring, bore a second crop of its rose-coloured flowers in October. Choisya ternata also bloomed well this autumn, but as it invariably flowers a second time in the south-west this is nothing extraordinary. Anemone sylvestris, which bore hundreds of flowers in the spring, is again in fine bloom. Another flower now open in the garden is the Shamrock Pea, Parochetus communis, with the exception of the lovely Algerian Iris, I. stylosa, which generally commences to bloom at the very end of October, but this year opened its first blossoms on October 7, since when it has daily provided most acceptable flowers for the house. *Wyndham Fitzherbert, Kingswear, November 27.*

Late Peas (see p. 373).—I made a sowing of Latest of All Peas at about the same date as Mr. Payne (July 20). I picked about a quart of Peas on December 4. There are still a few more pods, but I doubt if they will fill sufficiently for use. I gathered a dish of the same variety on December 3, 1913. *G. T. Jackson.*

A Curator's Son.—The *Evening News* of December 5 contained a rather sordid account of Mr. J. T. Smith, aged 53, who died suddenly in Hackney Workhouse. He was described as a man of "brilliant attainments" who had been unable to find employment and had been in the workhouse for four years. It was also stated that his father, a former curator of Kew Gardens, had left him a fortune, which he lost through investments on the Wool Exchange. When I joined the Kew staff in 1879 the curator of the gardens was Mr. John Smith. He had a wife and two children; the elder, a daughter Elizabeth, was 24 when she died in 1882. Mrs. Smith, the wife, died in 1884, aged 59. In May, 1886, owing to health failure, Mr. Smith resigned the curatorship. He went to live in a villa at Twickenham, where he died in 1888. Till then the son lived with his father. He had some kind of clerical occupation in London, but he was intellectually weak, and I am afraid he was not capable of serious work. The father had saved a little money (not much), and this on his death was doled out to the son by the late Mr. Jordan, a family friend of the Smiths. I am not certain of the amount, but I have an idea that it provided the son with 10s. a week. This patrimony had almost become exhausted when John persuaded Mr. Jordan to let him have what remained to get to Canada and try his luck there. He went, but did not succeed, and a few years ago he returned to this country penniless. He obtained some kind of employment and managed to keep going for a time. He applied for employment "of any kind" at Kew about four years ago, but, in the words of the late director, "Kew is a place of strenuous work where no man who cannot do a competent day's labour has a chance." We all liked Smith and some of us helped him, and we are very sorry that his life ended in the workhouse. *W. W.*

A Selection of Apples (see pp. 353, 373).—Replying to Mr. Molyneux's criticism of a selection of Apples recommended by me on p. 353, perhaps I may trespass on your space to give reasons which cannot always be stated in the limits imposed on the calendar writer. In the first place, may I say that I write entirely as a private gardener? I have always understood that a market grower would usually plant only a limited number of varieties that are known to succeed in his district and suit his market. In his case there may be no reason to store fruits for the purpose of maintaining a constant supply from August till the late spring months. Few varieties would then make for economy in working and marketing, hence the chief reason in his case. I consider the average private gardener is in quite a different position. Apart from his own ideas, his employers also have their own peculiar tastes, which must be satisfied. Also quite apart from the question of supplies, the average man, if he can grow fruit and his employer desires it, likes to exhibit at shows, or at least maintain an exhibition in his fruit-room at home. If he wishes to compete in the classes for the large collections, for which prizes are offered by the R.H.S., he certainly must plant most of the varieties mentioned on p. 353, a fact of which Mr. Molyneux is perfectly aware. A private fruit garden is usually planted with the view of making it (and incidentally the fruit-room afterwards) a place of interest, and to see row after row of the same variety would be distinctly monotonous. However, having rated me for mentioning 56 varieties, Mr. Molyneux justly complains that I omitted that excellent variety Grenadier, which he calls an early Apple! Most of us think that Lord Suffield—or in districts where Lord Suffield does not succeed, Lord Grosvenor or Stirling Castle—well worth growing for use in August and September before Grenadier is ready; still, I quite agree there is room for Grenadier. Mr. Molyneux goes on to say I am "equally unhappy in the dessert section." No, sir, I am not, for the reasons stated above. Numbers of varieties are planted first because they are appreciated at home, and in many instances because they are wanted for exhibition purposes. Your correspondent also classes Lady Sudeley as a mid-season variety. I am quite under the impression that it is an early variety ripening in August and September, and, like most early Apples, useless unless eaten at that season. I cannot follow Mr. Molyneux at all in classing Rival and Charles Ross with Lady Sudeley and Worcester Pearmain. I should consider the two latter entirely out of season when the former are fit to eat. Mr. Molyneux also ignores one of the best early Apples—viz., Langley Pippin. It is not large, but otherwise an excellent early Apple, which will be extensively grown when better known. Most people will readily admit the claims of Cox's Orange Pippin, but it is certainly not a success in many gardens, and the fruit-room which depended on this solely for late supplies would be sadly lacking in many seasons. Another reason (stated on p. 353) why one would recommend a number of varieties to be planted is that all varieties do not crop alike each season. I entirely agree with Mr. Molyneux when he says that no better late Apples can be grown than Bramley's Seedling, Newton Wonder, Lane's Prince Albert, and Dumelow's Seedling (Wellington). I can also assure him that, however good the last-named is, the trees are a miserable failure in many localities. When engaged as foreman at Mentmore, Buckinghamshire, about twenty years ago, I saw Dumelow's Seedling growing as I have never seen it since. Superb fruit was sent from that garden to Covent Garden Market by the ton, and they always commanded the top price. But in the two gardens I have had charge of since, in Kilkenny and in Kent, and having planted Dumelow's Seedling at both places, it is a very indifferent success, and from that experience I should hesitate to recommend it for planting on a large scale, though myself preferring it to any other variety as a late cooker. In reply to the last paragraph, that "many varieties recommended are very liable to canker," that is very much a question of soil and climate; most of the varieties named thrive here without trouble in that respect, but Dumelow's Seedling is one of the worst offenders. If a beginner wished to grow a few Apples I should not dream of recommending so many. I wrote in general terms for the average garden. No, Mr. Molyneux, I am quite unrepentant and not a bit unhappy. The R.H.S. show on December 1 would have been much less interesting had it consisted of stacks of a few varieties of Apples, however good, instead of the fine collections seen, in which most of the varieties of mid-season and late Apples I mentioned were represented in many fine dishes, with the possible exception of Dumelow's Seedling. *J. G. Weston, Ashford, Kent.*

Rainfall at Glasgow.—I enclose herewith particulars of the rainfall from November 28 to December 5, as registered in certain parks in our City :—

AMOUNT REGISTERED DAILY FROM NOVEMBER 28 TILL DECEMBER 5, 1914.

	Nov. 28.	Nov. 29.	Nov. 30.	Dec. 1.	Dec. 2.	Dec. 3.	Dec. 4.	Dec. 5.	Totals.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Ruchill Park	·42	·45	·94	·25	·29	1·16	·94	·31	4·76
Alexandra Park ..	·44	·62	·84	·20	·42	·94	1·04	·18	4·68
Springburn Park ..	·38	·52	·83	·29	·26	1·39	·85	·44	4·96
Botanic Gardens ..	·40	·46	·90	·24	·26	1·40	·88	·40	4 94
Queen's Park	·43	·61	·67	·31	·41	1·34	·82	·30	4·89
Bellahouston Park ..	·49	·50	·82	·30	·30	1·20	·85	·40	4·77
Tollcross Park	·49	·64	·60	·43	·37	1·20	·87	·27	4·87
Maxwell Park	·40	·49	·83	·41	·43	1·48	·84	·24	5·12
Kelvingrove Park ..	·46	·55	·88	·25	·32	1·43	1·01	·40	5·39
Victoria Park	·53	·48	·91	·31	·39	1·69	1·08	·47	5·86
Glasgow Green.. ..	·38	·47	·58	·40	·40	1·18	·80	·28	4·49

The records were taken at 9 a.m. daily and refer to the previous twenty-four hours. Due allowance must be made for local conditions, as the altitude, exposure and surroundings are in each case different. *J. Whitton, City Chambers, Glasgow, December 7.*

Freylinia cestroides Mr. Wyndham Fitzherbert, in his note on Greenway, p. 364, states that probably Freylinia cestroides has never flowered in this country. The plant has bloomed twice in our winter gardens, but I have never yet succeeded in establishing it out-of-doors. The species requires a dry, warm position. We had to destroy it in the winter garden as it was so subject to thrips and mealy bug; but I feel sure that, if planted in a hot, dry position, it would flower out-of-doors. Probably the late Mr. Gumbleton's garden at Belgrove was too moist, so that growth was too soft for flowering. The flowers are small and yellow coloured, not unlike those of Cestrum, hence the specific name. *H. Kempshall, Abbotsbury Gardens.*

The National Rose Society's New Issue of "Hints on Planting Roses" The 1914 edition of the handbook upon *Hints on Planting Roses*, published by a committee of the National Rose Society, has just been issued to members. Valuable and lucid cultural details are embodied in the little book, which will be of great assistance to the amateur who is about to venture upon the planting of Roses for the first time. The appearance of this publication, however, prompts me to ask a question. On pages 20 and 21 a list of "Roses for Garden Decoration" will be found. The list of Hybrid Teas consists of 33 varieties, 17 of which are of foreign origin, the remainder having been raised in these islands. This is of little consequence, but it evidently shows that the committee responsible for the compilation of the list considers the merits of the Roses in an unbiased manner. But how does the opinion of this committee support that of the committee responsible for Gold Medal awards? In the list in question I only find the names of eight Gold Medal Roses, the oldest being J. B. Clark, which gained the highest award in 1904. Since that year the National Rose Society has awarded 65 Gold Medals to new Hybrid Tea Roses alone, no fewer than 11 in 1912 and 17 last season. As the edition of the booklet is that of the present year, and is presumably up to date in every respect, one wonders what has happened to the Gold Medal garden or decorative Roses of recent introduction. Are they not up to standard? Is it not a fact that the list I am dealing with simply condemns the present absurd method of making awards to *garden* Roses before they are tested under *garden* conditions? There is also an obvious error in the list of Roses. On p. 20, under the heading "summer flowering" varieties, or those which bloom only once in the year, I observe that Arthur R. Goodwin is included in the list of Austrian Briars. This Rose is also found in its proper place amongst the Austrian Hybrids on the next page, and it is admittedly one of our best and most floriferous garden sorts. Criticism of the list might be carried further, but one naturally asks why such anachronisms as J. B. Clark and White Dorothy are found in an up-to-date list of garden Roses? Mrs. A. E. Coxhead is included amongst Roses of a pink shade. Those who know this fine Rose would hardly agree to this definition of its colour. *George M. Taylor, Mid-Lothian.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

December 1.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair), Sir Everard im Thurn, Dr. A. B. Rendle, Messrs. W. C. Worsdell, A. Worsley, G. Wilson, R. H. Pearson, W. Hales, W. E. Ledger, H. J. Elwes and F. J. Chittenden (hon. secretary).

Dianthus barbatus spirally contorted.—Mr. Fraser showed a photograph of a plant of Dianthus barbatus with its stem spirally contorted and the leaves displaced from their usual opposite and decussate position to a spiral arrangement.

Pelargonium hybrids.—Mr. Fraser also showed specimens of Pelargonium × Unique and P. × conspicuum, and made remarks upon them which will be embodied in his report.

New plant.—Mr. W. C. Worsdell showed a dried shoot which he had collected in South Africa, probably in the Transvaal, with male flower. It was not referable to any known genus, but showed closest affinities with the Sapindaceae, though apparently not very nearly allied to either of the recognised sections of that family. The leaves are pinnate and the disc of the male flowers very highly developed.

Isoloma with supernumerary petals.—Mr. Worsley showed flowers of an Isoloma which always produced more than the normal number of petals. He had pollinated the original parent Isoloma with pollen from a Gloxinia with more than five petals, and of the 70 plants raised this was the only one showing any difference from the normal Isoloma. It was constantly sterile, unlike the majority of Isolomas.

Black-fellow's Bread.—Dr. Rendle showed a specimen of the material known as black-fellow's bread which he had picked up in Gippsland, Australia. It was globular, reddish-brown, hard, and solid; weighed about 3lb.; and was about 6 inches in diameter. The material has been known for some time, and was recognised as of fungus origin by Berkeley who thought it to be related to the truffles, and named it, in 1839, Mylitta australis. Later specimens were sent to Dr. Cooke showing it to be a sclerotium, and bearing fructifications which enabled Dr. Cooke to assign it to its proper position. He named it Polyporus Mylittae (1892). The sclerotia vary in size from that of a Pea or Hazel Nut to that of a man's head, and specimens weighing 39lb. and 50lb. respectively have been recorded. The consistency when fresh is that of cheese or stiff gelatine; but on exposure to air it hardens and becomes quite horny. Its structure is that of the ordinary sclerotium with multitudes of interlacing hyphae. It is eaten by the aborigines, but has little nutritive value, containing no starch or nitrogen and only a small quantity of pectase. It is somewhat like Rice or Tapioca to the taste, with a decided flavour of Coconut when fresh; when toasted it is not unlike passover cake. As growth proceeds it rises and cracks.

Callipsyche aurantiaca.—Mr. W. E. Ledger showed an inflorescence of this uncommon Amaryllid, native of the Andes of Ecuador, the flowers of which are at first green, changing to bright yellow, and have much exserted stamens, the filaments being double the length of the long tubular perianth. It is figured in *Refugium Botanicum* t. 167.

Peculiar Oak leaves.—Mr. E. A. Bowles showed Oak leaves from the common Oak with extremely narrow, almost linear lobes. No member of the Committee had seen lobes of this character before and watch will be kept upon the tree to see whether the occurrence of this kind of foliage is persistent.

Snowdrop with stem.—Mr. Bowles showed some Snowdrop bulbs produced at the apex of a stem about ½ inch in length, which had apparently proceeded from the base of the old bulb. It was thought probable that the occurrence of this stem was due to the late date at which the bulbs had been planted in stiff loam, bringing about an aberration of growth.

Variegated Erodium cicutarium.—Mr. Chittenden showed leaves of a variegated Erodium cicutarium which had appeared in his garden.

Growth of Apple trees.—He also produced figures showing the average growth produced by different varieties of bush Apple trees on Paradise and Crab stocks, in each of three years, half of which trees had been pruned in the season of planting, and half not, subsequent pruning being done in the ordinary fashion so as to shape the tree. The trees were all of the same age, and as nearly alike when planted as possible. There was, of course, considerable difference in the rate of growth in different varieties, and this was modified according to whether they were on Paradise or Crab stocks, but comparing the same variety on the same stock pruned in the season of planting with those not pruned in the season of planting, differences in subsequent behaviour were found according to whether they were on Paradise or Crab stock The following figures are typical of the trees on Paradise stock :—

	Total growth in		
Peasgood's Nonesuch	1912. ft. in.	1913. ft. in.	1914. ft. in.
Average of five trees pruned in season of planting, winter 1911-12	14 2½ ...	30 8 ...	66 9
Average of five trees not pruned in season of planting, winter 1911-12	8 10½ ...	28 9 ...	56 7

The following are typical of those on Crab stock :—

	Total growth in		
	1912. ft. in.	1913. ft. in.	1914. ft. in.
Peasgood's Nonesuch			
Average of five trees pruned in season of planting, winter 1911-12	15 7	43 1½	99 1
Average of five trees not pruned in season of planting, winter 1911-12	13 10	39 9	110 0

Comparing these it is seen that with both stocks greater growth was produced by the pruned trees in the first year, and this was true of all the ten sets in the experiment.

In the second year the same is true for Peasgood's Nonesuch, and for all the other varieties on Paradise stock, but three of the five varieties on Crab stock gave greater growth in the trees not pruned in the season of planting.

In 1914, all the trees on Paradise stock pruned in the season of planting again gave greater growth than did those not pruned, but four of the five varieties on Crab stock gave greater growth in the trees not pruned in the season of planting.

The fifth, which behaved like those on Paradise, was Mr. Gladstone (as it did in 1913), and this, from its different habit of growth, might be expected to behave abnormally. These results uphold the advocates of pruning the season of planting so far as dealing with trees on Paradise stock is concerned, but they also suggest that the use of Crab stocks might modify the procedure and help to explain the differences of results so frequently reported.

Calanthe × Brainchii. — Mr. Gurney Wilson drew attention to the plant shown at the last meeting in order to point out that crosses had previously been made between the evergreen and deciduous species of Calanthe. He referred to the account given in the *Gardeners' Chronicle* for 1896 (Vol. XX., p. 602), when Messrs. Sander, on November 10, showed Calanthe × albata (C. veratrifolia × C. × Cooksonii = Sedenii), "a curious break between the evergreen and the deciduous Calanthes with white flowers, intermediate in form between the parents," mentioned also in the *Journal* R.H.S., Vol. XX., p. ccxv. Also to Vol. XXXIV. (1903), p. 310, when on October 27 Mr. H. J. Elwes showed a spike of a Calanthe, subsequently called C. × Elwesii. This was a cross between C. veratrifolia and C. Stevensii, "a singular hybrid between the evergreen and the deciduous sections, and with white flowers apparently intermediate. The plant was said to resemble C. veratrifolia in habit "

NATIONAL CHRYSANTHEMUM.

December 9.—The last committee meeting for the year 1914 was held on the above date at Essex Hall, Strand. A small show was advertised in conjunction with the meeting, but there were few exhibits, nor were the new varieties submitted for award so numerous as at previous meetings.

First-class Certificates.

Richmond.—This beautiful yellow variety was raised by Mr. E. G. Hill, Richmond, U.S.A. The blooms are rather above medium size and of the type known as "market." The broad yellow florets are stout and have a slightly incurving tendency. It was stated that cut blooms last fresh and attractive for three weeks. Shown by Mr. T. Stevenson.

Chestnut Beauty.—A very charming single-flowered variety of medium size and good form. The ray florets are broad, plentiful, and of good substance, so that the blooms travel well. The colour is dark terra-cotta, with overlay of purple, and the beauty of the flowers is enhanced by this colour appearing in the disc florets and contrasting with the golden stamens. Shown by Mr. Norman Davis.

E. G. Mocatta, Esq., Woburn Place, Addlestone (gr. Mr. T. Stevenson), contributed an attractive collection of such decorative varieties as True Gold, A. J. Balfour, Maud Jeffries, Mrs. J. Thompson, Autocrat and Black Prince, also a selection of the Japanese varieties as well as the singles Bronze Beauty, Grace Darling, and Merstham Jewel. (Large Silver Medal.)

W. W. Mann, Esq., Ravenswood, Bexley (gr. Mr. J. Simond), showed vases of exceedingly fine blooms. Mrs. R. C. Pulling, Francis Rowe and F. T. Mew (Japanese), and Marjorie Shield (incurved) were exceptionally good. (Silver Medal.)

Mr. Norman Davis, Framfield, Sussex, showed a few vases of single-flowered varieties, such as Molly Godfrey (large pink), Framfield White, Commodore and Crimson Decorator. (Silver Medal.)

PERPETUAL-FLOWERING CARNATION.

ANNUAL MEETING.

December 2.—The annual meeting was held in the R.H.S. Lecture Room after the close of the show. Mr. J. S. Brunton presided, and there were about 30 members present. The following items are extracted from the report of the committee :—

EXTRACTS FROM THE REPORT.

Your committee, in submitting its annual report, regrets that it is unable to record a continuance of the prosperity that favoured the society in 1913. The terrible war now raging, which has curtailed the spending powers of the people, has affected the income of the society adversely. The outlook, however, is far from being alarming. Viewed from all standpoints, other than financial, the society has reason to look upon the year 1914 as being worthy of comparison with previous years.

Two exhibitions were held, and both were carried through without loss to the society.

The Bournemouth Show, the second provincial effort in the history of the society, was decidedly successful, more so perhaps than that held in the spring of 1913. The two exhibitions of 1913-14 have absorbed nearly two-thirds of the society's income, exclusive of the cost of printing and stationery in connection with the same. After deducting the special prizes so kindly offered by our supporters, the total cost of the two exhibitions is considerably over one-half the income of the society. The paragraph relating to membership discloses a severe shrinkage. Although very few members have actually resigned since the outbreak of war, there has nevertheless been a higher percentage than usual. Furthermore, despite keeping the books open for a few days beyond October 31, no less than seventy-nine members have failed to remit their subscriptions, resulting in the loss of nearly £30. Your committee hopes that a portion of this sum will be forthcoming, but the possibility of additional resignations must not be overlooked.

Fifty-eight new members were added during the year.

Total membership, November 8, 1913......		434
Members joined to November 12, 1914 ...		58
		492
Less resignations	32	
Subscriptions unpaid	79	111
Membership		381

The institution of associate members has not proved of any material value, for no fresh additions were made during 1914, and of those already on the list only one has remitted his subscription.

The institution of an affiliation scheme has proved eminently satisfactory, and your committee is pleased to be able to report that five horticultural societies have taken advantage of the benefits of affiliation.

The raising of the registration fee for new varieties has apparently had the desired effect. The total number of registrations for the year is 13.

The society has again been favoured with a large number of special prizes for competition at the society's shows. During the year two Challenge Cups were won outright : one of these has been replaced by a piece of plate.

The balance-sheet shows receipts amounting to £362 12s. 7d., and expenditure totalling £353 2s. 6d., but the liabilities exceed the assets by £20 12s. 6d.

The officers and the retiring members of the committee with the exception of four were re-elected.

THE BELGIAN RELIEF FUND.

The chairman announced that the sale of blooms by public auction in aid of the Belgian Relief Fund had realised £19 18s. 6d., and that eight guineas had been realised during the day by private sales. It had been decided that the latter money should be divided between their two Belgian friends, who were with them that evening, and who had officiated as judges at the show. Twelve months ago Mr. E. V. Bouckenooghe, of Ypres, and Mr. Draps-Boudry, of Oost-Dunkerke, were with them as happy visitors; they were now among them as unofficial refugees. Their nurseries were things of the past, and they were entirely dependent upon their friends. It gave him great pleasure to hand each gentleman the sum of four guineas as a gift from the society.

Mr. Bouckenooghe expressed his thanks. He had that day learned the value of English friendship, for he had lost his all and he and his family were ruined. He was not downhearted, however, for his friends in that very room had overwhelmed him with offers of plants as soon as he could make a fresh start. His nurseries had been shelled to pieces, and probably his home also; but he could bear up with the knowledge that English soldiers were at the elbows of his fellow-countrymen, who cared for nothing when once the British soldiers had got a foothold in Belgium. He knew all would be well in the end.

Mr. Boudry endorsed his friend's remarks and tendered his sincere thanks to everyone. He had been overwhelmed with kindness from the moment when Mr. Harry Mount took charge of him and his family.

THE CONFERENCE.

A conference was held on the same evening.

Mr. Montague Allwood addressed the meeting on the evolution of the Perpetual-flowering Carnation.

"In its original form, as Dianthus Caryophyllus, it was an insignificant plant. To-day it is looked upon as one of the greatest, if not the greatest, flower in horticulture. Blooming the entire twelve months of the year and having no period of rest, with one of the largest ranges of colour found in any species of plant, it is, above all, a reasonable plant, and everyone can grow it. It can be grown in a greenhouse or in the garden as a hardy garden plant. Propagation is, naturally, an all-important factor in its culture, because a plant that is perpetually growing must deteriorate unless every attention is given to the propagation and selection of cuttings. Furthermore, if excessive heat is used the cutting is forced and the plant ruined. Therefore a temperature of 55° is the limit. Sand is the best medium to use. As soon as the cutting is rooted it must be potted into a small pot, so that it establishes itself quickly, and from this stage it should be grown in a cool, fresh atmosphere, with an abundance of light, so that you build up a strong, robust plant.

"We will assume that the cuttings are rooted in January, which every expert agrees is the best month to propagate Carnation cuttings, providing the stock is strong and healthily grown.

"The cuttings will be rooted in February and potted into small pots (2 inches). From these they are potted into 3-inch pots in late March, and into 5-inch pots in April, and require potting into their flowering pots in late May or early June. Of course, if the plants grow very well, they might be potted again into 8-inch or 9 inch pots in July, but this depends upon the growth.

"Respecting the question of soil and compost for growing Carnations, I believe it is possible to grow Carnations in any soil—at least, I believe the soil can be made suitable. Lime is essential; also stable manure and burnt ashes are of great assistance. Sufficient sand should be added to insure adequate drainage, but what quantity it is impossible for me to say unless I know the exact texture of the loam that is employed."

Mr. Allwood illustrated his lecture with an excellent series of slides.

Col. Mark Lockwood asked Mr. Allwood, the lecturer, his opinion as to the value of overhead heating, and Mr. Allwood replied that it was the greatest advantage the trade grower had over the amateur. Mr. Grylls inquired if it would not be better to mix loam with the sand used for propagating, and the lecturer replied in the negative. Mr. G. Lawrence considered that amateurs' greenhouses were too dwarf, and that the plants would do better in houses provided with more space.

Mr. George Lawrence next showed a series of coloured slides of Carnations and other plants in his garden, which were much admired.

SMITHFIELD CLUB.

Roots and Garden Sundries.

December 7-11.—The Smithfield Club was founded in 1798 with the object of supplying the cattle markets of Smithfield with the cheapest and best meat. The first show was held in 1799, when the prizes amounted to £52 10s., offered in two classes for cattle and two for sheep. This year the prizes are of the aggregate value of £4,450 11s. 10d. The Cattle Show, as it is colloquially and thus best known, never fails to arouse interest, and many others besides stock breeders find profit in a visit. The classes for cattle, sheep, and pigs are as well filled as ever, and, just as at a flower show, there is keen rivalry for pride of place, and the same eagerness shown before the judges arrive to put the finishing touches to the exhibit. We are reminded, too, of other scenes at flower shows, for there is the same eager craning over the barrier by the attendants anxious to know how the decisions are going, the arguments afterwards, and, finally, when there is nothing more to be said, the exodus to break a long fast, leaving the judge's stewards and the Press in possession until the public is admitted.

But there still remains one task for the jurors—the selecting of "the best bloom in the show"—and again the championship is won by the Black Angus breed, a magnificent steer, not two years old, and weighing more than 13cwt.

And now we are at liberty to inspect the purlieus of this huge exhibition, every space being crammed with objects connected with the agricultural craft. Implements of all kinds are displayed on every side, also solid-looking carts, painted even on the face of the tyres; tents, tarpaulins, pumps, sprayers, hydrants, hose, fencing, gates, manures, washes, twine, leather goods, saddlery, weighing machines, oil cakes, meals, and other stock foods; seeds, fruit trees, and a thousand and one other things, many of which have an interest to gardeners.

The seed-houses are represented by exhibits in the galleries and a few in the Gilbey Hall. Messrs. Sutton and Sons' stand is as imposing as ever, with its huge roots, pedigree cereals, flowers, and vegetables. Their Mangels are exceptionally large; one root of Prizewinner turns the scale at 54lbs. The varieties New Red Intermediate and Golden Tankard are equally good, and the Swedes are but little inferior in size, Magnum Bonum and Up-to-Date being two of the finest varieties. There are also specimens of Sugar Beet grown at Reading, stated to contain sugar to the extent of 17 per cent. Some of the garden roots are of first-class exhibition size and quality, notably Long Keeping, Ailsa Craig, and Crimson Globe Onions; New Red Intermediate Carrots, Tender and True Parsnips, and Potatos in variety. Purity Cauliflowers looked very appetising, and, in addition, there are Brussels Sprouts, Cucumbers, Beets, Mushrooms, Salsify, and other kinds.

Messrs. James Carter and Co., Raynes Park, have a similar exhibit, the front built up with mammoth roots of Swedes, Mangels, and Kohl Rabi, with garden vegetables and cereals along the base. Of the Mangels, Windsor, Emperor, and Long Red are unusually large, and their Invicta Swede impressed us with its fine appearance. Of culinary vegetables there is a fine display of Peas, Crimson Ball Beets, Record and Ailsa Craig Onions, Turnips, Potatos, Carrots, and Parsnips. Two fine Peas are displayed in Rent-payer, an early and mid-season Marrowfat variety, and British Wonder, which grows only 1½ foot tall. The specimens of Sugar Beet evoke considerable interest, as does a case containing a variety of germinating seeds. For the farmer, New Marquis Wheat, of rich golden colour and very hard in the grain, has special interest, seeing that the yield is sometimes so much as six quarters to the acre.

Messrs. John K. King and Sons, Coggeshall, have also an imposing exhibit of roots, cereals, grasses, and culinary vegetables. Royal Saxon Mangel, Invincible Green Top Swede, and Kohl Rabi are all of the largest size, and very good, too, is their Orange Tankard Mangel. Several good dishes of Tomatos are displayed along the front of this stand, the varieties including Market Wonder, Afterglow, and Lord Roberts. Perfection Marrow Parsnips are some of the best in the show, and amongst a good selection of Potatos we were impressed with the appearance of the second-early variety Nun Nicer.

Messrs. Toogood and Son, Southampton, show produce from their farm and garden seeds, and a mammoth Marrow is exhibited as usual, this time a large specimen of the Tremendous Green variety. Scarlet Intermediate Carrots, Southampton Champion Onions, and Green Globe Turnips are a selection of their culinary vegetables.

Messrs. Edward Webb and Sons, Wordsley, are amongst the largest exhibitors of farm and garden produce, their Mangels, Swedes, Kohl Rabi, and other agricultural roots being equal to any in the show. Nothing is better than Yellow Globe and Yellow-fleshed Tankard Mangels, New Buffalo and New Empire Swedes, and Invincible Yellow Turnips. Large Sugar Beets find a place in this excellent collection, which also comprises Potatos, Marrowfat Parsnips, White Globe Turnips, New Masterpiece Onions, Satisfaction Beets, Grand Leeks, and White Celery.

Messrs. Kent and Bryden, Darlington, show agricultural roots and Potatos, of which XL All and Perfection Swedes, individual roots of the latter weighing as much as 22lbs., are conspicuous.

Messrs. Edward King and Co., Coggeshall, show exceptionally large Mangels of the Essex Marvel variety, also the fine purple-topped Perfection Swede, Golden Ball Turnips, Windsor Castle, and other good Potatos, Perfection Sprouts of unusual size, Prizewinner Leeks, Carrots, Peas, and a variety of cereals.

Other exhibitors of agricultural and garden produce are Messrs. Harrison and Sons, Leicester; Dickson, Chester; Little and Ballantyne, Carlisle; and Gartons, Warrington.

Potato growers are, as usual, in strong force.

Messrs. Dobbie and Co., Edinburgh, have a number of excellent varieties staged in a very attractive manner, the tubers being more evenly matched and clearer in skin than the majority, for these details in exhibiting are entirely missed by those who cater purely for the agriculturist. Some of the tubers are from the Dunbar district, with the beautiful red, russety skins characteristic of "Dunbars." Others from grey soils and black lands are as unlike as possible, although of the same varieties. We may select Midlothian Early, The Chapman, The Factor, Prolific, and King Edward VII. as the pick of this fine collection.

Mr. T. A. Scarlett, Edinburgh, is forward with several novelties in Potatos, and Arran Chief, last year's principal novelty, is conspicuous. There is a companion variety, named Arran's Hope, an oval tuber with shallow eyes, which the grower informed us gave 54½ tons from 3½ acres. Another novelty is Summit, a round tuber, stated to be disease-proof, and cropping 17 to 18 tons per acre, but hardly so good in quality as some others. Mighty Atom, however, is stated to be of grand quality as well as disease-proof.

Messrs. Fidler and Sons, Reading, have one of the largest exhibits of Potatos, comprising some sixty varieties. Dreadnought is a new white kidney, and recommended for a main crop variety; Queen Mary, a long, kidney-shaped tuber; and Dalhousie, said to be the best of the Up-to-Date type, also attracted notice.

Mr. A. Findley, Auchtermuchty, showed, amongst others, the new variety Magnificent, a round, late variety, producing 23 tons to the acre, and Majestic, a novelty of last season, which has given as much as 13lbs. from a single root. Potatos are also exhibited by Messrs. R. Ball and Sons, Preston; Isaac Poad and Sons, Fife; R. W. Green, Wisbech; James Gardiner, Perth; W. J. Reid, Montrose; John A. Grant, Wester Rarichie; Arthur J. Sole, Peterborough; W. Dennis and Sons, Kirton; W. J. Campbell, Dalkeith; and Robert Morris, Coupar Angus.

Exhibits of fruit and fruit trees are made by several firms, including the King's Acre Nurseries; W. C. Seabrook and Sons, Chelmsford; W. and J. Brown, Peterborough; and W. Horne and Sons, Cliffe, Rochester, whose exhibit is the best of this class.

Amongst the numerous exhibits of implements, spraying machines occupy a prominent place. The Four Oaks Spraying Machine Company has a selection of specialities, from the large three-spray machines on wheels, to the little hand-sprayers for Roses, holding about 3 pints. They are all worked by compressed air and the nozzles are of different grades, one giving a mist-like spray valuable for florists, as it could be used for freshing flowers even in a dwelling-room.

Messrs. Walter Voss and Co., Ltd., Millwall, show spraying fluids, soil sterilisers, fumigants, and the "Woburn" specialities. Their "Voster" powder for soil sterilising is said to be valuable in preventing disease in seedling plants, such as Asters, Stocks, and others especially liable to damping off.

Jeyes, Limited, exhibit their Cyllin soft soap, an excellent specific for many purposes in the garden, a special horticultural wash, and a horticultural powder.

Messrs. William Cooper and Nephews, Berkhamsted, exhibit useful brushes for removing mosses and lichens from trees, Tactite for tree banding, Tomarite, a remedy for Cladosporium in Tomato, and various poisonous sprays.

Amongst the numerous tools exhibited, gardeners will find useful appliances in the stand of Messrs. Trewhella Brothers, Smethwick, Birmingham, "Monkey" jacks, for uprooting trees, stumps, logs, etc.; "Monkey" wire strainer, for tightening wire fences; and the "Honds" post-hole digger. The "Fastnut" spanner, made by Fastnutt, Ltd., Newgate Street, London, is one of the best of its kind we have seen; it acts automatically, the tool taking nuts of all sizes, and it is self-adjusting.

Obituary.

Robert Lamb.—We regret to announce the death of Mr. Robert Lamb, of Lossiemouth, near Balmoral, for twenty-four years superintendent of the public parks and open spaces at Manchester. He was born in Aberdeenshire in 1846 and began his career as a gardener at an early age at Relugas, in the county of Elgin. After gaining experience in various places, including Drumpellier Castle, in Lanarkshire, in the county of Durham and in Suffolk, he was for a time in charge of the vineries at Buckingham Palace. Later he was engaged at Cowley Manor, Gloucestershire, and at Torkington Lodge, near Stockport. In 1886 he was appointed superintendent of Philips' Park, Manchester, and subsequently was made general superintendent of the Manchester parks and recreation grounds, which together embrace about 1,400 acres. Some of the largest public open spaces in Manchester were laid out under his direction, and he was contemplating further improvements, including the enlargement of the boating lake, which he had created at Heaton Park. Mr. Lamb was held in high esteem by the citizens of Manchester and enjoyed the entire confidence of the Parks Committee. His wife predeceased him two years ago.

LAW NOTE.

GARDENING CONTRACT DISPUTE.

On November 23 and following days a case was heard before the High Court Official Referee at Lewes, in which Lady Wolseley, of Ragged Lands, Glynde, sought to recover from Major and Mrs. Barton, of 12, Eton Gardens, Hove, the sum of £225 4s. 6d., balance of account for laying-out gardens attached to the defendant's residence, and damages for alleged breach of contract.

Lady Wolseley's counsel stated that his client met Mrs. Barton at the house of a mutual friend at Brighton in October, 1912, when Mrs. Barton said she would like Lady Wolseley to undertake the designing and laying-out of her garden. Approximately £500 was stated as the probable cost, and on October 30 a verbal arrangement was made that Lady Wolseley should undertake the work for the sum named, and that the designs and the manner of doing the work should be left entirely to her. Messrs. Langhein, of South London, who had a working agreement with her, were ultimately engaged to do the work, which was at once commenced. The only agreement was the verbal one arising out of the conversation between the ladies, and upon that the action was brought. Before the work was in progress Mrs. Barton paid Lady Wolseley £250 on account, offering to pay the whole £500 if

Lady Wolseley desired it. It was alleged that by reason of Mrs. Barton's interference the plaintiff was prevented from completing the work, and this, it was said, constituted a breach of agreement.

The defence was a general denial. In the first place, the defendants said that there was no agreement, and they denied that the work was begun, as stated, on November 5, or that the plaintiff had properly carried it out. The defendants also counterclaimed in respect of alleged over-payments.

Lady Wolseley said in her evidence that she had drawn plans for her own guidance. Mrs. Barton had left everything absolutely to witness's discretion. Subsequently, proper plans were prepared by Messrs. Langhein, who carried out her ideas.

In reply to counsel's inquiry whether from beginning to end Mrs. Barton expressed no wish as to what she wanted, Lady Wolseley replied that she had said she wanted the garden to be in the Dutch style, and that she would like brick paths laid down

Miss Moore, the head of Lady Wolseley's College, gave evidence as to the conversation which had taken place between Lady Wolseley and Mrs. Barton about the garden, in her presence, and said that Mrs. Barton always seemed pleased with what was being done, and wished the work to be completed as quickly as possible.

Mr. Walter Langhein, who carried out the work for Lady Wolseley, said that he followed the plans prepared by Lady Wolseley. He made an estimate of the work at £500, of which £385 was for his firm and £115 for the profit of the Glynde School. It was usual for the College to receive from 20 to 30 per cent. on the prices of their contracts. Evidence in detail was also given as to the material supplied, the wages paid, and the various extras which had added to the cost of the work.

Mr. Langhein further stated that he had a working arrangement with Lady Wolseley by which he was to pay her 30 per cent. of any contract he obtained through her, to be paid either in cash or by work at Glynde College. When making up his account for the work done at Eton Gardens he had added the 30 per cent. payable to Lady Wolseley to each individual item.

The Official Receiver said it seemed that the witness had provided Lady Wolseley with all that she was entitled to under the agreement, and therefore he, the witness, was the person who was interested in the result of the action, and not Lady Wolseley.

Mr. Walter Langhein said it was represented to him that Mrs. Barton had complained about the materials and the workmen just before the work was stopped. He denied that he had overcharged for men's time or that he had charged against the defendants for materials which had not been used for their garden.

The case was then adjourned for several days, owing to the Referee being called away to a case in South Wales. When the case was resumed counsel for the plaintiff told the Court that the case would come to an abrupt conclusion. Lady Wolseley had hitherto relied entirely upon the evidence, figures, and documents supplied by Messrs. Langhein. She came to an arrangement with that firm after having satisfied herself as to their reputation and position, and she gave them full power to order the materials and do all the work, and it was upon their report alone that she terminated the contract. Unfortunately, in the course of the trial it had become apparent that the accounts of Messrs. Laughein were not as they should have been, and in those circumstances Lady Wolseley would not proceed with her action. Lady Wolseley was anxious that there should be no reflection upon her professional reputation as a lady gardener or upon her personal honour. In those circumstances she wished to withdraw from the action.

The Referee said he thought that Lady Wolseley was well advised in taking the steps she had taken to stop the case. It was unnecessary that any suggestion should be made against Lady Wolseley's personal honour or business reputation. All he had to do was to give judgment for the defendant on the claim with costs, and the counterclaim having been withdrawn, the defendant would have the costs of that also.

Judgment was entered accordingly.

MARKETS.

COVENT GARDEN, December 9.

Cut Flowers, &c., Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz. ..	2 6- 3 6
Azalea, white, per doz. bunches..	4 0- 4 6
Bouvardia, pink, per doz. bun...	5 0- 6 0
— white	5 0- 6 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties ..	1 3- 1 9
— smaller, per doz. bunches..	10 0-12 0
— Carola (crimson), extra large	2 0- 2 6
— Malmaison, per doz. blooms	
— — pink ..	10 0-12 0
Chrysanthemum, specimen blooms, white, per doz. ..	2 0- 3 0
— yellow per doz.	2 0- 2 6
— pink ,,	1 9- 2 0
— bronze ,,	1 9- 2 0
— white, medium per doz. ..	1 6- 1 9
— coloured, per doz.	1 3- 1 9
— Spray, white, per doz. bun...	4 6- 6 0
— — yellow, per doz. bun. ..	5 0- 7 0
— — pink, per doz. bun. ..	5 0- 8 0
— — bronze, per doz. bun. ..	5 0- 6 0
— singles, disbudded, per doz. blooms ..	0 9- 1 3
— — sprays, per doz. bunches ..	4 0- 8 0
Eucharis, per doz.	2 0- 2 6
Gardenias, per box of 15 and 18 blooms.. ..	3 0- 4 0
Hyacinths, Roman, 6's, per doz. bunches ..	8 0- 9 0
Lapageria alba, per doz. blooms ..	— —
Lilium auratum, per bunch ..	2 6- 3 0
— longiflorum, per doz., long	2 3- 2 6
— — short ..	2 6- 2 9

	s.d. s.d.
Lilium lancifolium album, long ..	1 9- 2 0
— — — short ..	1 6- 2 0
— — rubrum, per doz., long ..	1 3- 1 6
— — — short ..	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 —
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches ..	1 6- 2 0
Narcissus, Soliet d'or, per doz. bun.	4 6- 5 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium..	1 6- 2 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	5 0- 6 0
— White, per doz. bunches ..	6 0- 8 0
Poinsettias, per doz. blooms ..	9 0-12 0
Roses: per dozen blooms, Brides	1 6- 2 6
— Kaiserin Augusta Victoria	1 6- 2 0
— Lady Hillingdon	1 3- 1 6
— Liberty ..	1 6- 3 6
— Madame A. Chatenay ..	1 0- 2 6
— Melody ..	1 6- 2 6
— My Maryland..	1 3- 1 9
— Niphetos ..	1 3- 1 6
— Prince de Bulgarie	2 0- 2 6
— Richmond ..	1 6- 3 6
— Sunburst ..	1 6- 3 0
— Sunrise ..	1 6- 2 0
— White Crawford	1 6- 2 6
Tuberoses, on stems, per doz. ..	0 6 —
— short, per doz.	0 5- 0 6
Violets, English, per doz. bunches ..	1 3- 2 0
— Princess of Wales, doz. bun.	2 6- 3 6
White Heather, per doz. bunches ..	4 0- 6 0

Cut Foliage, &c.: Average Wholesale Prices.

	s. d. s. d.
Adiantum Fern (Maidenhair) best, per doz. bunches ..	5 0- 6 0
Agrostis (Fairy Grass), per doz. bunches ..	2 0- 4 0
Asparagus plumosus, long trails, per half-dozen	1 6- 2 0
— medium, doz. bunches ..	12 0-18 0
— Sprengeri ..	6 0-12 0
Autumn foliage, various, per doz. bunches ..	6 0-10 0
Carnation foliage, doz. bunches ..	3 0- 5 0
Croton foliage, doz. bunches ..	12 0-15 0

	s. d. s. d.
Cycas leaves, per doz.	2 0- 9 0
Eulalia japonica, per bunch ..	1 0- 1 6
Fern, French, per doz. bunches..	0 6- 0 8
Honesty, per doz. bun.	10 0-12 0
Lichen Moss, per doz. boxes ..	10 0-12 0
Moss, gross bunches ..	6 0 —
Myrtle, doz. bnchs. English, small-leaved	6 0 —
— French, per doz. bunches..	1 0- 1 3
Pernettia, well berried, per doz. bunches ..	8 0- 9 0

Remarks.—The conditions of trade are much the same as last week, and there does not seem to be any advance in prices; indeed, in the case of Richardias their price is lower. Carnations are still fairly cheap, and the best and most saleable varieties are Pale Pink Enchantress, Beacon, Britannia, Delight, Carola, Mayday, Lady Northcliffe, White Perfection, White Wonder, Lady Meyer, Queen Alexandra, Empire Day and British Queen. There is still an abundant supply of Chrysanthemums. Good sprays of yellow varieties are scarce, and single varieties are nearly over for the season. A few bunches of Snowdrops were on sale this week. Tuberoses are getting scarce and their value has risen. Poinsettias are arriving in excellent condition, but they do not sell readily. From France are arriving daily a few baskets of Narcissi, Paper White and Soleil d'Or; Violets, including large bunches of the Parma type, a few pink Anemones, Ranunculuses and Mimosa, but they all show the effects of the long journey, especially the Violets, being about two days longer than usual in transit. A small quantity of Holly and Mistleto is on sale.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen ...	4 0- 6 0
Araucaria excelsa, per dozen .	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz. green	18 0-30 0
— variegated ..	30 0-60 0

	s. d. s. d.
Begonia Gloire de Lorraine, 48's, per dozen ..	10 0-12 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz. ..	18 0-30 0
— — 60's, per doz.	8 0-12 0

Plants in Pots, &c.: Average Wholesale Prices—*Cont.*

	s. d. s. d.
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen ..	10 0-12 0
Erica, gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 9 0
— hyemalis, 48's, per doz. ..	8 0-10 0
— — alba ..	10 0-12 0
— nivalis, 48's, per dozen ..	9 0-10 0
— — thumbs, per doz. ..	3 0- 5 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's ..	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen ..	8 0-12 0
— in 32's, per doz.	10 0-18 0

	s. d. s. d.
Geonoma gracilis, 60's, per dozen	6 0- 8 0
— larger, each ..	2 6- 7 6
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0 36 0
Latania borbonica, per dozen ..	12 0-30 0
Lilium lancifolium album, per doz.	— —
— — rubrum, per dozen ..	15 0-21 0
— longiflorum, per dozen	18 0-30 0
Lily-of-the-Valley,	—
48's, per dozen	24 0-30 0
Marguerites, in 48's, per doz., white	9 0-10 0
Pandanus Veitchii, per dozen ..	36 0-48 0
Phoenix rupicola, each	2 6-21 0
Poinsettias, 48's, per doz. ..	9 0-10 0

Remarks.—Business is more brisk in this department than it has been for some weeks past. There is a better demand for Ferns and Palms, a good quantity of these plants being despatched to the provinces for the Christmas trade. Cyclamens and Solanums are in better demand.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples—	
— English, cooking, per bus. ..	4 0- 6 0
— — dessert, per ½ bushel ..	3 0- 6 0
— Nova Scotia, per brl. ..	12 0-22 0
— United States, per barrel ..	13 0-18 0
— Californian, per box ..	5 0- 7 0
— Oregon, per box	7 0-10 0
Bananas, bunch;	
— Medium ..	6 0 —
— X-medium ..	7 0 —
— Extra	8 0 —
— Double X ..	9 0 —
— Giant	10 0-12 0
— Red, per ton ..	£20 —
— Jamaica, p. ton	£10 - £11
Cobnuts, per lb. ..	0 4½- 0 5
Cranberries, per case	6 6-11 6

	s.d. s d
Grapes: Alicante, per lb.	0 8- 2 0
— Almeria, per barrel of 3 doz. lbs.	10 6-16 6
— English, Gros Colmar, per lb.	0 8- 1 9
— Muscat of Alexandria ..	2 3- 4 0
— Canon Hall, per lb.	2 0- 5 0
Nuts, Brazils, p. cwt.	44 0-56 0
— Chestnuts, per bag	14 0-27 0
Pears, American, per barrel ..	22 0-32 0
— Californian, per case ..	12 6-15 0
— stewing, per bushel.. ..	6 0- 7 0

Remarks.—The following varieties of Apples from home growers are available:—Bramley's Seedling, Dumelow's Seedling (syn. Wellington), Newton Wonder, Blenheim Pippin and Cox's Orange Pippin. During the week about 56,000 barrels of Apples have arrived from Nova Scotia, consisting of the varieties Ribston Pippin, Blenheim Pippin, King of the Pippins, and others. There have also been large consignments of Apples from Oregon and British Columbia. Pears arriving in barrels from overseas include Duchess d'Angoulême and Keiffers; packed in cases are Winter Nelis, Doyenné du Comice, Glou Morçeau and Easter Bergamot. Dutch Catillacs are plentiful. There are some good bunches of Black Alicante and Gros Colmar Grapes, and Muscat Grapes are fairly plentiful for the time of year. There are ample supplies of Pine Apples, Red and Yellow Bananas, and Oranges.—*E. H. R., Covent Garden, December 9.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	4 0- 4 6
Beans, French, per lb.	1 0- 1 6
Beetroot, per bushel	2 6- 3 0
Brussels Sprouts, per ½ bus. ..	0 9- 1 3
Cabbages, per tally	4 0- 6 0
Carrots, per cwt. ..	2 6- 3 0
Cauliflowers, per tally	12 0-15 0
Celeriac, per doz...	2 6- 3 0
Celery, per doz. bun.	7 0- 9 0
Chicory, Belgium, per lb... ..	0 4- 0 6
Cucumbers, per doz.	5 0- 7 0
Eschallots, per ½ sieve	2 0- 2 6
Garlic, per lb. ..	0 6- 0 7
Globe artichokes, per doz. ..	2 6- 4 0
Herbs, per doz. bunches ..	2 0- 3 0
Horseradish, English, per bundle	2 6- 3 0

	s.d. s.d.
Leeks, per dozen ..	1 6- 2 0
Lettuce, per doz...	2 6- 3 0
Mushrooms, cultivated, per lb...	1 0- 1 3
— Buttons ..	1 0- 1 3
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per cwt. ..	10 0-12 0
Parsnips, per cwt.	3 0- 4 0
Peas, per lb. ..	0 9- 1 0
Potatos, new, per lb.	0 10- 1 0
Seakale, per doz. punnets ..	14 0-16 0
Spinach, per bus...	3 0- 3 6
Tomatos, English, per doz. lbs. ..	5 0 6 0
— seconds ..	2 0- 4 0
— Teneriffe, per bundle.. ..	14 0-22 0
Turnip, English, per cwt.	2 6- 3 0
Turnip tops, p. bag	1 6- 2 0
Watercress, p. doz.	0 6- 0 8

Remarks.—English and Teneriffe Tomatos and Cucumbers continue to be scarce. French salads have been very scarce this week. There are sufficient French Beans and Mushrooms to meet the demand. Produce arriving from the Channel Islands includes Potatos, Peas and Beans. Trade is fairly good in all departments. *E. H. R., Covent Garden, December 9.*

Potatos.

	s. d. s. d.
Bedford	3 9- 4 0
Blackland	3 6- 3 9
Dunbars — Up-to-date	5 0- 5 3

	s.d. s.d.
Dunbar — Langworthy ..	5 6 —
Essex	3 9- 4 0
Kent	3 9- 4 3
Lincoln	3 6- 4 3

Remarks.—Trade is very steady, with slightly advanced prices. Consignments are quite equal to the demand.—*Edward J. Newborn, Covent Garden and St. Pancras, December 9.*

Answers to Correspondents

Address : *Constant Reader.* Mr. A. C. Hill, 35, Alexandra Road, West Kensington.

Anemone coronaria : *J. E.* We have your letter. Will you please send name and address, not necessarily for publication, but as a guarantee of good faith?

Asparagus : *N. V. T. A., Wijchen.* English Asparagus is usually packed in bundles containing from 100 to 125 heads. Bundles of Toulouse Asparagus contain as a rule about 50 heads, the number in this case, and also in the case of Cavaillon, Sprue, Giant, and the other kinds you mention, varying according to the thickness of the stems. The bundles are always of the same aggregate size, so that when the stems are thick there are few; when thinner they are more in number. With regard to the quotation of 8s. for English Asparagus, we were told that this was for bundles of especially good quality, from a grower who supplies a strictly limited quantity of the highest quality. Such produce always commands a high price.

Calanthe Veitchii : *Constant Reader.* Calanthes frequently degenerate in gardens although for a year or two the plants may thrive satisfactorily. The trouble is generally the result of improper treatment, but it may arise from unsuitable surroundings. Where Calanthe Veitchii and similar hybrids are grown in high temperatures and a moist atmosphere and allowed a fairly proportioned rest, the plants usually maintain their vigour. Plants which are cultivated largely for decorative purposes usually degenerate in course of time, and should be replaced occasionally with fresh, vigorous stock. Grow the plants in a compost containing plenty of fibrous loam.

Chrysanthemums : *W. N.* If, as we presume from your note, the blooms are required for market purposes the following varieties would be suitable :—(a) For flowering in October : White.—Moneymaker, Mrs. J. B. Scott. Mrs. W. Roots, H. W. Thorp, Virginia and Debutante. Pink.—Cranford Pink, Betty Spark, Tom Page, Joan Edwards (single), Gracie Page (single), Provence (for sprays). Bronze and Red.—Market Red, Rosalind, Juliet, Bronze Cheer, Source d'Or, Heston Bronze, Hestonia, La Pactole, Beatrice, Emperor, and the single varieties Manor House Terra Cotta, Portia, Mary Richardson, and Ceddie Mason. Yellow.—Soleil d'Octobre, Yellow Moneymaker, Cranford Yellow, Cranfordia, Mrs. R. Hamilton, T. R. Weston, singles Celia, Canary Bird, Mrs. Tresham Gilbey, and all the Caprice du Printemps varieties, which are useful during October and especially as dwarf pot plants. (b) For flowering in November: White.—William Turner, Moneymaker, Mrs. W. Buckbee, Maud Jefferies, Mrs. John Maher, Mrs. F. Judson, Mrs. H. W. Thorp, singles Mensa, White Beauty, White Pagram and Gwenny Green. Pink.—Tom Page, Ethel Thorp, Ivy Gay, Phoebe, Reginald Crocker, N.C.S. Jubilee, singles Molly Godfrey, Edith Pagram, Florrie King, Mrs. W. Higgs and Lawrence's Pink. Bronze and Red.—Miss A. Brooker, Matthew Hodgson, Freda Bedford, Black Prince, Hetty Wells, singles Sandown Radiance, Bronze Beauty, Jessica, Bronze Pagram and Mary Morris. Yellow.—True Gold, David Ingamels, Yellow Moneymaker, Captain Julyan, Heston Yellow, Mrs. R. Hamilton and Ethel Harvey, singles Glorious, Mrs. Loo Thomson, Buttercup, Charles Kingsley and Ethel Mortimer. (c) December varieties.—Winter Cheer (pink), Victoria (white, yellow and bronze), Mrs. J. Thompson (white, yellow, buff and bronze), Heston White, Autocrat (white), December Gold (yellow), Mrs. J. W. Crossley (crimson), Baldock's Crimson, A. J. Balfour (pink), Bertha Lachaux (pink), Nagoya (yellow) and Madame L. Charvet (pink). All the varieties enumerated for December flowering will furnish a supply well into January if some of the plants are allowed to remain in the open or in temporary shelters for as late as possible. The following is a select list of varieties suitable for growing in the open to flower in October : Framfield Early White, Debutante, Mrs. Collier, Polly (yellow, bronze and crimson), Almirante, Eldraco, Dolores, Betty Spark, Goacher's Crimson, Cranford Pink, Cranford Yellow, Dorothy Ashley, Elstob Yellow, La Parisienne, Perle, Chatillonaise, J. Bannister, Le Pactole, Minnie Carpenter, Roi des Blancs, Juliet and Mrs. Lintz. Provision should be made for protecting the plants during very cold weather.

Forcing Lilium Harrisii : *W. N.* Lilium Harrisii is not forced so extensively as formerly now that growers have found that Lilium longiflorum will flower all the year round. The time required to flower the bulbs depends very largely on the temperature of the house, and also on the season of the year; but from four to five months is the average. The bulbs should be potted immediately the first shipments arrive, it being usual to place three to four in a 24-inch pot. The pots should be placed in cold frames and covered with short straw or similar material until the bulbs have developed plenty of roots, when a portion of the stock should be removed to a house having a temperature of 50° to 55°, the warmth to be increased in two or three weeks some 5° or 10°. To maintain a succession batches should be introduced into heat every three weeks. Large growers place the bulk of their consignments in cold storage at the docks and draw on them for potting as required. You may be able to arrange with an importer of the bulbs to supply you with a certain number, say once a month, throughout the year.

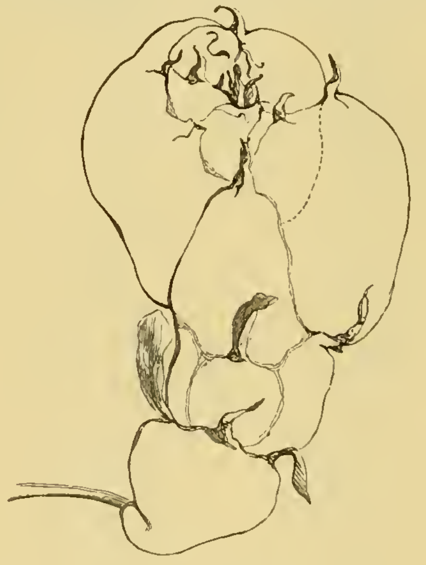


Fig. 148.—proliferous pear.

Lime-sulphur for Apple Trees : *H. P. B.* We are glad that you have drawn attention to the statement respecting lime-sulphur (p. 376), as it affords us an opportunity of pointing out that in the article on p. 354 a printer's error made the word *Aphis* to read *Apple*, an unfortunate mistake that was overlooked. Lime-sulphur is an excellent fungicide for Apples and other fruit trees and bushes, but is not an effective insecticide. In a trial, shoots covered with aphides were dipped in lime-sulphur of summer strength, and only a few of the smaller were killed, while not nearly all were dead in 24 hours after being dipped in the crude mixture.

Names of Plants : *P. C.* 1, Euonymus japonicus variegatus; 2, Veronica Traversii; 3, Cistus incanus (Rose Cistus); 4, Juniperus chinensis; 5, Griselinia littoralis; 6, Viburnum tinus.—*D. R.* 1, Tibouchina semidecandra (syn. Lasiandra macrantha); 2, Jasminum grandiflorum; 3, Bougainvillea glabra; 4, Sedum Sieboldii; 5, Justicia carnea, probably (send in flower); 6, Peperomia arifolia var. argyreia.

Proliferous Pear : *A. G.* (see fig. 148). Malformed Pears, such as the one you send, are not uncommon in some seasons. The edible portion of a Pear is not the true fruit, but the dilated end of the flower-stalk, in which the true fruit, or core, is embedded. In these proliferous Pears the swollen branch, after a temporary arrest, starts into growth again, and sometimes leaves are developed, there being only rudiments in your specimen.

Tomato : *W. N.* Holmes's Ideal is a rather heavier cropper than the variety you mention. Some of the fruits are a little larger.

Tennis Lawn : *Horticol.* Without fuller particulars it is somewhat difficult to say what treatment would best meet the case. Assuming, however, that the work has been properly done, and the turf of good quality, a dressing of fine leaf-mould and sand should have a beneficial effect on the grass. The sooner the dressing is applied the better, provided the weather is suitable. Allow the lawn to rest until about the end of February or the beginning of March, then, when the weather is favourable, commence operations by making good any deficiencies and rolling the turf regularly but lightly until the growth of the grass demands the use of the mower. After that date close attention is required. Do not mow the grass too closely until growth is active and the turves knitting together. When these conditions are well forward mowing and rolling can be regularly performed to produce an even, close surface. Should the turf be of a thin and poor nature a dressing of concentrated manure will be advisable, again using caution in regard to the quantity, as two light dressings are better than a single heavy one.

Winter Dressing of Fruit Trees : *F. E. N.* The branches and twigs of fruit trees require winter dressing as much as the trunks. If you use lime, you might try builder's size to make it stick on, mixing 1lb. with a bushel of lime. Probably 2lb. of Portland cement would be more effective; but we do not know that either has been tried. If the cement were used it would have to be stirred well into the limewash, and the mixture would need to be used immediately, or it might become too stiff for distributing. To make concentrated lime-sulphur, if you have an iron boiler big enough to hold 30 gallons, place 24lb. of the best lump quicklime in it, pour enough water on the lime to slake it, add at once 48lb. of flowers of sulphur, add water to make about 25 gallons, and begin to beat, stirring the mixture up until it boils. Boil for an hour, stirring occasionally. This will make 20 gallons of concentrated solution. When it cools, strain into a tub through a fine sieve if you intend to spray, but not if you will use the stuff only to paint the trunks with a brush. The boiler, to start with 25 gallons, must be of fully 30 gallons capacity, or the stuff will boil over. It will waste in boiling to about 20 gallons. If it wastes to a greater degree a little water can be added to make that quantity. The solution will keep well if a barrel be completely filled with it and bunged. If not quite full, pour a pint of paraffin on top, to keep air from the lime-sulphur. To test the strength of the solution, it is necessary to have a hydrometer, costing about 3s. 6d. A Baumé hydrometer is easiest to read, and if it shows a density of 30 to 32 degrees, for a winter wash to 1 part of the solution, 12 to 15 parts of water should be added. For summer use 1 part to 40 of water is a proper quantity. The equivalent of 30 degrees Baumé is 1.263 on the ordinary specific gravity hydrometer. As you can buy the concentrated solution at 1s. per gallon, or less. it is not worth while to make it at home unless you need a large quantity.

Communications Received.—S. H., Queen County—A. G.—J. E.—D. W.—F. E. N.—T. W.—A. W. D.—Nurseryman—A. B.—Miss P.—H. F.—H. S.—Prof. S.—C. T. D.—Sir F. C.—J. S.—G. F. M.—N. E. B.—N. G. A.—G. T.—G. B.—A. J. C.—W. G. S.

THE
Gardeners' Chronicle
No. 1,460.—SATURDAY, DECEMBER 19, 1914.

CONTENTS.

Apple canker 401
Apple Harry Pring .. 396
Apples, a selection of .. 402
Balloch Park, Loch Lomond 398
Books, notices of—
  Botanical Magazine .. 401
  The Garden Under Glass 398
  The Flora of New Guinea 402
Bordeaux mixture and Woburn paste .. 401
Dahlias, florists' and garden 403
Fruit tree, the parts of a 395
Holland, produce market in 401
Iris Histrio alba as a pot plant 396
Iris stylosa 403
Kew Guild roll of honour 401
Market fruit garden, the 396
Nomenclature and anger 400
Obituary—
  Waland, John J. .. 408
Potato crop, the .. 401
"Pour nos amis français et belges" 397
Peru, customs formalities in 401
Ross, Mr. Charles .. 401
Societies—
  National Chrysanthemum 406
  National Rose .. 405
  Royal Horticultural .. 403
  Royal Scottish Arboricultural 407
  Women's Agri. and Hort. International Union 407
South Africa, National Botanic Garden of .. 400
Veitchian managers, the 401
War items 400
War's effect on horticulture 403
Week's work, the—
  Flower garden, the .. 399
  Fruits under glass .. 398
  Hardy fruit garden, the 399
  Kitchen garden, the .. 399
  Orchid houses, the .. 399
  Plants under glass .. 398
Wood used for making gunpowder 401

ILLUSTRATIONS.

Aloë succotrina in the Wild Reserve of the National Botanic Gardens, S. Africa. (Supplementary Illustration.)
Apple Harry Pring 396
Diagram showing the increase in the National Rose Society's membership 405
Iris Histrio alba 396
Luculia gratissima 404

OF THE PARTS OF A FRUIT TREE.

THERE seems to be some reason for thinking that we have not advanced so far in our ideas and practice of fruit-tree treatment and training as have our cousins in France; thus one looks in vain in our nurserymen's catalogues for illustrations of espalier and counterspalier; although theory indicates the latter as an approach to the ideal—and practice extending to nearly a score of years seems to justify theoretical considerations—the double U. Associated with the art and craft of fruit-producing, the French have a number of specialised names for the various parts of the tree; for some of these we have English equivalents, for others we can but use phrases unless we follow events and boldly adopt some terms, as we have already done in the lore of motor-cars and aeroplanes.

It may, perhaps, be useful to attempt to give here the meanings of a number of the technical terms of the French, seeing that interest has been aroused in their works, and that difficulty is experienced in understanding the meaning of the French terms. Moreover, possibly by discussion in these columns, we may arrive at good and simple equivalents for some words.

Starting from the stock ("*sujet*," "*porte-greffe*" [1*]), upon which a graft or scion ("*greffon*"[2]) is placed, in time we get the maiden (*scion* or *greffe d'un an*[3]). The grafting ("*greffage*"[4]) may be of various mode, crown grafting ("*greffe en couronne*"[5]), cleft ("*en fente*"[6]), whip ("*g. anglaise*"[7]), etc.; closely allied we have budding ("*greffe d'un oeil*"[8]), of which the English term, "shield grafting," is the exact equivalent of *g. en écusson.*[9] As the tree grows the main and lateral leading shoots develop ("*prolongements*"[10]) (the former also "*flèche*"[10]), and we distinguish between branches of support or framework (together "*charpente*"[11], and separately "*branches charpentières*[12] on *mères*"[12]), and fruiting branches and organs. At the base of each leaf, except those of the basal cluster ("*folioles*"[13]) is an apparent eye or bud ("*oeil*"[14]), which, when fully developed, becomes a "*bouton*"[15] at the fall of the leaf: this according to the terminology of some writers, but generally "*bouton*"[15] is only used to mean either a flower bud (*b. à fleurs*), or the more fully developed fruit bud (*b. à fruits*[15]). When the leaders are shortened the terminal eye breaks and continues the shoot (*pousse*[16] or *p. de prolongement*[16]). This often is not quite straight with the basal part, so that in successive years the terminal eye is left alternately on opposite sides, and sometimes to help matters the shoot is cut some five or six buds beyond the selected eye. Disbudding is done on these eyes, and the piece forms a splint (*onglet*[17]) for tying up (*palissage*[18]) the new shoot to aid its proper direction; alternatively, an added stick (*tuteur*[19]) may be tied on as a splint if needed. The snag left by cutting too far beyond a bud is also an "*onglet.*" From the buds develop the lateral shoots (*bourgeons*[20]); academically apparently a "*bourgeon*" is a fully developed eye (*oeil*), which will give rise to a wood shoot, as opposed to the fully developed eye, which gives eventually fruit. This is distinguished as a "*bouton.*"[21] "*Bourgeon*" as a shoot seems first to have been applied to the vine, and hence to all wood shoots and not the eye itself. Thus too "*ébourgeonment*"[22] has left the proper old meaning of disbudding, and is used for removal of actual shoots. The "*bourgeon*" on further growth may become either a wood branch (*rameau*[23], or *rameau à bois*[23]), or a *coursonne* if treated. The growth of the shoot may be checked or favoured by the "*entaille,*"[24] which is a small V or crescentic excision of bark below or above the attachment to the stem (*empâtement*[25]). Eyes which ought to remain latent till the next season on a bourgeon or rameau give rise to prematurely developed shoots (*faux bourgeons*, or *bourgeons anticipés*[26]), if they grow the same season. For instance, summer pinching (*pincement, pinçage*[27]) is designed to cause growth of premature shoots. Some eyes give rise to very strong wood shoots, generally vertical in direction and rebellious to production of fruit. These are called "*gourmands.*"[28] On the other hand, they may only grow into thin twigs, which are called "*brindilles,*"[29] or on a Peach tree perhaps a "*branche chiffonne*"[30]). The brindille may be short, long, or "*couronnée.*"[31] The two former are wood twigs. The last bears a fat bud at its end which will blossom. The attachment, "origin" in anatomical language, or foot of a shoot or branch, in fact, what would form the heel in preparing a cutting for growing, is the "*empâtement.*"[32] This is the academic spelling, but it is frequently spelt "*empattement.*" A synonym is the "*talon*"[35] (heel). Close to the base or foot of the shoot is the basal cluster of leaves (*folioles*[34]); these have latent eyes and nourish the base of the shoot, on either side of which is the pair of latent stipulary eyes (*yeux stipulaires*[35]). These are the mainspring of Lorette's tree-producing activities. I gather that it is not established botanically whether these are truly stipulary or accessory and axillary in their nature, but the term "stipulary" has already become fairly established. Attention may again be called to the important fact that the phrase "taillez sur l'empattement," used by Lorette (literally, "prune back to the heel"), means prune back to the basal cluster.

A branch from the main stems and branches (*charpente*[36]), which has been pruned back, and bears fruit organs, becomes a "*coursonne*"[37], an abbreviation of "*branche coursonne.*" Etymologically, a "*courson*"[37] is a shoot which has been pruned short, as opposed to one pruned long. The proper "coursonne" only bears fruiting organs, but a "coursonne sterile" is also recognised. This carries eyes, dards, and perhaps twigs (brindilles), which in time may yield fruit buds. The term *coursonne* is used in a more limited sense by Lorette.

The fruit spur (*lambourde*[38]), etymologically a little piece of wood used as a dowel, carries a fruit bud (*bouton*, or *b. à fruits*) at its end. It may be simple, or when several are attached to the same stem compound (*lambourde multiple, ou à plusieurs branches*). On the Pear tree the spur which bore a fruit the year before often becomes swollen and fleshy at its end, and surmounted by the ragged scar where the fruit stalk was attached, forms a structure known as a "bourse"[39]. I understand that there is no botanical term for this curious and important body, which generally gives rise to further fruit buds and dards, perhaps, too, to one or two brindilles. It seems to be peculiar to the Pear, though I have noticed somewhat poor attempts at a similar formation on an old Ribston Pippin tree.

More or less intermediate between the blossom bud or its fully developed fruit spur (*lambourde*), and the *brindille couronnée*, we have the "*dard*"[40] or "*bouton mixte*"[40]. Etymologically it acquires its name from the sharp-pointed bud which terminates it, thus likened to the point of a javelin or dart. The "*dard*" is distinguished from the fruit spur, with its fat, swollen, rounded bud, whilst at the other end of the series is the fruiting twig (*brindille couronnée*[41]). We have no English equivalent for this common appendage of the Apple and Pear tree. It varies in length from the short dard ("*petit dard*"[42]), but ½ inch long, to the long dard (*d. allongé*[42]), which may attain two or three inches. Left alone, it tends to bear blossom and fruit, but if interfered with, the eyes on its stem may give rise to one or more wood twigs. The short dard is distinguishable from the blossom bud by the fewness of the leaves of the basal cluster; with two or three its fate is still in the balance, but when five or eight or so appear it becomes a well-established fruit bud (*bouton*). When the fruiting tendency of the dard miscarries, it becomes a "*dard avorté.*"[43].

One or two important diseases may be mentioned. *La tavelure*[44], or scab, Fusicladium (Venturia) disease, *Pourridié*[45] *ou blanc des racines*, caused by Dematophora necatrix, *la cloque*[46] of Peaches, leaf curl, or Exoascus disease. Of pests, the *puceron lanigère*[47] will be readily recognised as the woolly aphis or American blight.

After discussing the matter of terminology with a well-known professor of botany, it is suggested that we should adopt the terms "dard," "bourse," and perhaps "coursonne"; for the leaves (*folioles*) at the base of a shoot "basal cluster" or "basal leaf cluster" is proposed. Botanically, I understand these leaves are not arranged in a whorl. Thus, the earlier prunings on Lorette's system, "sur l'empâtement," become "pruning back to the basal cluster," whilst often in his September pruning, and always in the old sense, it becomes "pruning back to the heel."

---

* For alphabetical list of terms, see p. 396.

In putting together this small and incomplete attempt to make clear some of the language of the French fruit-grower, I have made use of the works of Ouvray, Bellair, Vercier, and Lorette, all of which afford links in the chain. Littré's large dictionary has prompted me to touch lightly also on the more academic side.

To save repetition the terms quoted are arranged alphabetically below, the numbers given corresponding to the numbers in the text. *Herbert E. Durham, Sc.D., M.B., F.R.C.S., President of the Herefordshire Association of Fruit Growers and Horticulturists.*

ALPHABETICAL LIST OF TERMS.

Bourgeon 20
— anticipé 26
Bourse 39
Bouton 15, 21
— à fruit 15
— à fleur 15
— mixte 40
Branche charpentière 12
— chiffonne 30
— coursonne 37
— mère 12
Brindille 29
— couronnée 31, 41
Charpente 11, 36
Cloque 46
Coursonnes 37
Courson 37
Dard 40
— petit: allongé 42
— avorté 43
Ébourgeonnement 22
Empâtement 25, 32
Entaille 24
Faux bourgeons 26
Flèche 10
Folioles 13, 34
Gourmand 28
Greffage 4
Greffe en couronne 5
— en fente 6
— anglaise 7
— d'un oeil 8
— en écusson 9
— d'un an 3
Greffon 2
Lambourde 38
Oeil 14
Onglet 17
Palissage 18
Pinçage 27
Pincement 27
Porte-greffe 1
Pourridié des racines 45
Pousse 16
Prolongement 10
Puceron lanigère 47
Rameau 23
Scion d'un an 3
Sujet 1
Tavelure 44
Talon 33
Tuteur 19
Yeux stipulaires 35

*N.B.—For a counter spalier, Lorette recommends No. 16 gauge for the lower four wires; this gauge gives 22 metres per kilo and corresponds to between 11 and 12 on the Imp. Standard wire gauge. For the top wire he says 18 gauge; of this 14 metres weigh a kilo and therefore equal about No. 9 I.S.W. gauge.

A GOOD LATE APPLE.

At the meeting of the Royal Horticultural Society on October 20 last the Fruit and Vegetable Committee recommended an Award of Merit for a new variety of Apple named Harry Pring (see fig. 149). Those who visit the R.H.S. meetings are aware that, although seedling Apples are submitted for award in great numbers each season, few are equal to the high standard required, and that many show no advance on existing varieties. The award to Harry Pring was well merited, for the fruits have sterling qualities, especially in the matter of keeping. At Christmas the flesh is as crisp and juicy as that of many Apples when they are gathered from the tree. The flavour is sharp but agreeable. It cooks perfectly soft and the flesh is white; if there is one objection that might be raised against it as a culinary variety it is that the fruits are on the small side. The parentage is unknown, and we know little of its history beyond the fact that it was raised by the person after whom it is named. Mr. W. Peters, who exhibited the fruits which gained the award, informs us that the tree blossoms late and crops freely, and that it makes a rigid bush both on the Paradise and free stocks, and so far has shown no signs of canker. The following is a description of the fruit:—Medium size, round, skin pale yellow, flushed on the sunny side with bronzy-red and marked with small red dots; eye closed with reflexed segments, set in a rather shallow and puckered basin. Stalk thin, about ¾ inch long in a small cavity; seed cells large. Flesh white, crisp, full of juice, firm and of good flavour; a good cooker and pleasant for dessert. Season, November to February.

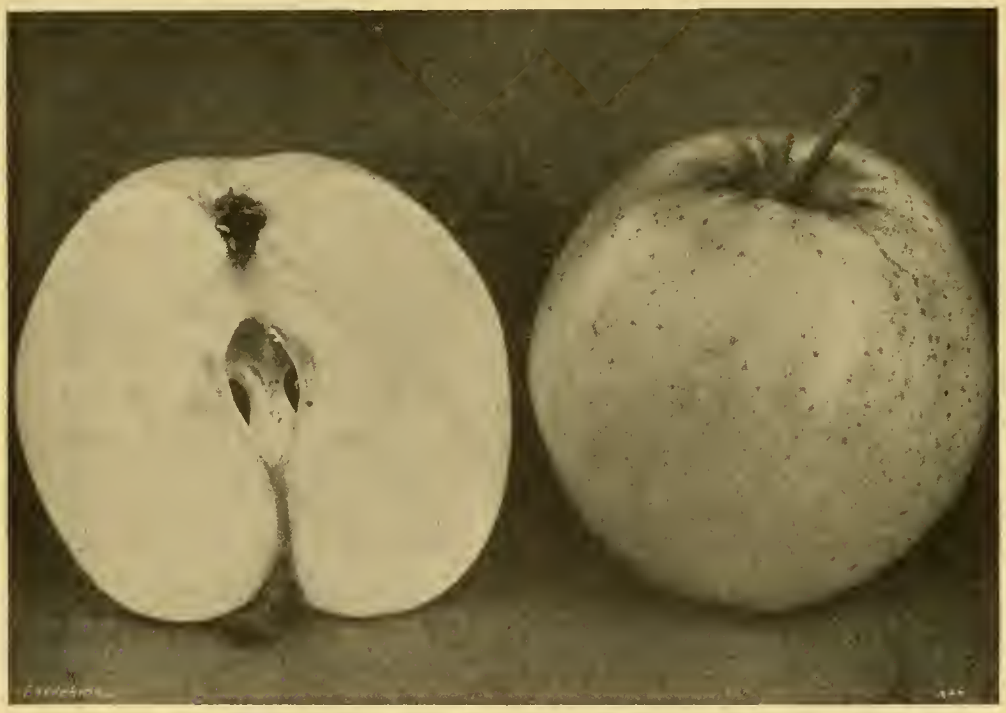


Fig. 149.—New culinary apple Harry Pring: nat. size.

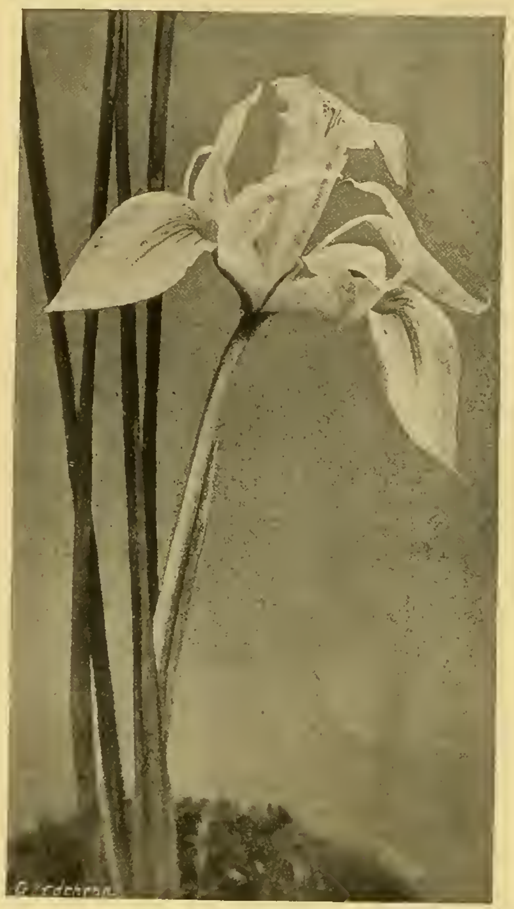


Fig. 150.—Iris histrio alba.

IRIS HISTRIO ALBA AS A POT PLANT.

Of bulbous Irises now in bloom out-of-doors there are Iris alata, I. Vartanii and I. Histrio. It is astonishing how well these species withstand the varying climatic conditions of winter, often appearing as fresh and beautiful in the most changeable weather as they might in favourable conditions. But in urban districts, notwithstanding the capacity of the plants for withstanding cold, the beauty of the flowers is apt to become sullied by deposits from the impure atmosphere. Consequently there is something to be said for cultivating some plants in pots for the decoration of the rockery or alpine house. In this case there can surely be no more suitable plant than Iris Histrio alba, a variety recently introduced from Palestine, where it is known as "Pearl of Jerusalem," which is illustrated in fig. 150. The specimen was sent us a day or two ago by Messrs. Barr and Sons; with its pure white, delicate-looking flower it was certainly a very charming pot or vase plant. The cultivation is perfectly simple. The bulbs may be planted in September, and the pots placed in a cold frame, where the mere protection afforded by the glass will be sufficient to enable the flowers to maintain their highest beauty.

THE MARKET FRUIT GARDEN.

A "Big Bud" Season.

The past spring and summer proved unhappily favourable to the spread of Black Currant mite. Up to this season the infestation in a large piece of big bushes planted nine years ago had been kept within moderate bounds, and the greatest crop ever grown in that orchard was produced. Badly infested bushes had been taken up, branches containing many "big buds" had been cut off, and isolated buds likewise infested had been picked off year after year since the attack began. Now, however, the badly infested bushes have become so numerous that they are to be left for one more season and then uprooted. Even when bushes are only half as old as mine new ones planted to replace those uprooted never grow even fairly unless well manured at the time, and when bushes are at nearly the end of their allotted term of life it is not worth while to plant new ones to replace those dug up. The Apple trees are now overshadowing the bushes badly, and need to be relieved from the competition of these rivals for food derived from the land. In younger plantations the old policy will be pursued; but even they are worse infested than they should be for their age. Apparently a dry and sunny season is favourable to the spread of the pestilent mite. *Southern Grower.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

Dans une réunion qui a eu lieu le 10 courant, le Conseil d'Administration de la Société Nationale d'Horticulture de France réuni sous la présidence de M. Viger, a décidé la reprise des travaux de cette association à dater du premier janvier 1915.

Les séances auront lieu le deuxième jeudi de chaque mois et les présentations de plantes nouvelles ou de belle culture y seront récompensées comme précédemment.

La publication du journal sera reprise à la même date.

Après avoir traité certaines autres questions telles que celles des élections annuelles qui ont été remises à la fin de l'exercice 1915, le conseil, sur la proposition de M. Truffaut, a décidé que dans le but de secourir les horticulteurs français et belges dont les établissements ont eu à souffrir par suite de l'invasion, le Bureau de la Société serait chargé dès maintenant de réunir et de compléter au fur et à mesure les renseignements qu'il pourra recueillir sur les sinistres, de manière à ce que, aussitôt après la guerre, la société puisse faire appel aux horticulteurs des régions non envahies et à nos amis de l'Horticulture anglaise pour secourir ceux de nos collègues qui auront souffert des conséquences de l'invasion.

NOUVELLES DIVERSES.

Nouvelles de France.—Cher Monsieur, Puisque vous vous intéressez au monde horticole faisant partie des défenseurs de la Patrie et du droit commun, je puis vous dire que mon deuxième fils, Ernest Maron, qui fit un stage dans les bons établissements d'horticulture d'Angleterre pour s'y perfectionner dans la culture des Orchidées, tout en apprenant la langue anglaise, a été mobilisé dès le début de la guerre dans le train des équipages automobiles; il est en bonne santé. Mon gendre, le lieutenant Maurice Charles, a été blessé assez grièvement à la hanche et à l'épaule droite; il a dû garder le lit pendant deux mois. Lorsque ses blessures furent a peu près cicatrisées, il a été dirigé sur Heidelberg où il se trouve actuellement. C'est vous dire que presque toutes les familles françaises ont des fils ou des parents dans cette maudite guerre. Dans votre numéro du 21 novembre vous demandez des nouvelles de M. H. Martinet; celui-ci était libéré de tout service militaire depuis plus de deux ans, mais dès l'ouverture des hostilités il a demandé au Ministre de la Guerre d'être réintégré dans son grade et ses fonctions de Capitaine d'Artillerie attaché au service d'Etat Major de l'Armée. Agréez, Monsieur, mes bien sincères salutations. *Ch. Maron.*

Nouvelles d'Horticulteurs Belges.[*]—M. Valère Bouckenooghe, directeur de la Société Horticole Yproise, a dû se réfugier en Angleterre. Son important établissement d'Ypres a été, comme bien on pense, détruit par les Allemands. Un autre horticulteur bien connu et dont l'établissement se trouve en ce moment en plein centre d'action, est M. Em. Draps-Boudry, d'Oost-Duinkerke. Il s'est également retiré en Angleterre. Nous venons d'apprendre d'autre part que M. Ad. Buyssens, le professeur de Floriculture à l'Ecole d'Horticulture de l'Etat à Vilvorde, est en bonne santé et qu'il n'a pas abandonné sa résidence.

Offre d'Hospitalité.—Un de nos abonnés serait heureux d'offrir l'hospitalité à des horticulteurs belges réfugiés. Ses préférences iraient à une petite famille, composée soit d'une dame et d'une demoiselle ou d'un petit garçon, soit de deux demoiselles. Nous saurions gré à nos lecteurs qui pourraient nous renseigner une famille à recommander pour cette offre.

Aux Halles de Paris.—Derniers cours des légumes secs, en diminution: Lentilles, 0 fr. 80 le kilo; flageolets blancs, 0 fr. 90; chartres rouges, 0 fr. 85; suisses rouges, 0 fr. 80; chevriers demi-verts, 0 fr. 90; Haricots blancs de Liancourt, 0 fr. 90; Riz mandarin, 0 fr. 50; Riz birman, 0 fr. 75.

Leaflets.—Le Board of Agriculture (Ministère de l'Agriculture anglais) publie une série de tracts traitant des cultures, des maladies, de l'exploitation des animaux domestiques. Plusieurs de ces tracts concernent les plantes horticoles, et se rapprochent des "Avis" publiés par l'Office horticole belge. Nous recommandons vivement aux horticulteurs du Continent réfugiés en Angleterre de se présenter au Board of Agriculture, 4, Whitehall Place, London, S.W., où ces leaflets sont remis à ceux qui en font la demande.

Commerce Horticole en Hollande.—Dans notre numéro du 12 décembre dernier (p. 383) nous avons donné quelques renseignements sur la situation du marché des légumes, des fruits et des fleurs en Hollande. On constatait avec curiosité que les prix des fleurs, produits de luxe dont il ne serait pas étonnant que l'on se passât en temps de guerre, étaient à peu près satisfaisants. Une chose tout aussi curieuse est l'augmentation de l'exportation de bulbes à fleurs, qui appert des statistiques publiées par le *Weekblad voor Bloembollencultuur.* De 6,969,700 kg. en septembre, 1913, l'exportation a passé à 8,104,800 kg. en septembre, 1914. Les achats de la plupart des pays belligérants ont cependant été notablement réduits. On fait remarquer qu'il n'en résulte pas nécessairement une situation brillante pour les producteurs de bulbes, car eu égard aux événements, des transactions se sont probablement faites à des conditions défavorables. On exprime aussi des inquiétudes au sujet du recouvrement des créances.

Formalités douanières au Pérou.—A retenir par les exportateurs: L'importation au Pérou de semences, plantes, boutures ou arbustes n'est autorisée que si les intéressés sont pourvus d'une *licence* délivrée par la Division de l'Agriculture du Ministère du Travail. Cette importation ne peut, de plus, se faire que par le bureau de douane de Callao ou par le bureau de poste de Lima.

Aux Horticulteurs Anglais.—Parmi les demandes d'emploi qui nous sont parvenues de la part de jardiniers ou ouvriers horticoles belges, il en est plusieurs émanant de personnes mariées que, dans la mesure du possible, il y aurait avantage à caser dans une habitation séparée ou tout au moins un appartement. Nous faisons donc un appel spécial à ceux de nos lecteurs qui seraient à même de trouver à proximité de leur établissement, les installations nécessaires pour le logement de petites familles. Nous pouvons les mettre en rapport avec plusieurs jardiniers belges connaissant à fond la production des plantes maraîchères.

LE WITLOOF OU CHICORÉE DE BRUXELLES.

Nous avons signalé déjà qu'un arrivage de Chicorée de Bruxelles, le premier depuis le début de la guerre, a été enregistré il y a quelque temps, au marché de Covent Garden. Nous reproduisons aujourd'hui une note parue à ce sujet dans *l'Indépendance belge*:—

"La culture de la Chicorée (culinaire), qui depuis quelques années a pris une si grande extension dans la banlieue bruxelloise, risquait fort de rester improductive, à la suite de la fermeture des frontières. L'agglomération bruxelloise ne consomme en effet qu'une très faible partie de l'immense production journalière de ce succulent légume et l'énorme excédent menaçait de pourrir sur place, faute de consommateurs. En temps de paix cet excédent est envoyé à Paris, où l'on est très friand de la Chicorée.

"Le midi étant fermé à l'exportation, les cultivateurs ont obtenu de pouvoir envoyer leurs légumes en Angleterre par la Hollande. Le transport se fera par voie d'eau, en suivant le canal de Willebroeck, le Rupel et l'Escaut.

"Bientôt donc les marchés de Londres, d'Edimbourg, de Manchester, de Glasgow, etc., seront pourvus de beaux légumes blancs; les Belges, et surtout les Bruxellois, en les voyant se pourlécheront les babines, engageront leurs ménagères ou leurs hôtes à en acheter et la Chicorée sera bientôt servie dans toutes les familles, dans tous les restaurants.

"Seulement, pour bien des Anglais, ce mets est inconnu; aussi, comme sa préparation entre pour une large part dans son succès, nous nous ferons un plaisir de publier à leur intention quelques recettes."

Toute exportation de Witloof a, en effet, été impossible et une campagne désastreuse était à prévoir pour les maraîchers brabançons. Non seulement le grand marché de Paris était fermé, mais aussi les débouchés allemands, hollandais, et américains qui devenaient de plus en plus importants. Il est exact que la Chicorée de Bruxelles n'est guère connue du consommateur anglais, bien que Covent Garden en écoule régulièrement depuis sept ou huit ans.

Il est curieux de constater le peu de vogue dont jouit en Angleterre ce légume si apprécié ailleurs; on l'a attribué à l'abondance d'autres légumes récoltés également en hiver, et spécialement du Chou-marin, qui y est produit sur une échelle bien plus grande que sur le Continent. Cependant le Witloof a des qualités que ne possède aucun autre légume et de nombreux spécialistes en recommandent chaudement l'emploi à leurs malades.

Dans son numéro du 14 juin, 1914, le *Gardeners' Chronicle* a publié un excellent article sur la culture, le forçage et le commerce de la Chicorée de Bruxelles, article dû à la plume de M. Henri Chevalier, professeur d'horticulture à Liége.

KORT OVERZICHT VOOR DE VLAMINGEN.

Belgische druiven komen sinds eenigen tijd over Holland in London aan. Ook Witloof werd in de laatste weken aangevoerd. Engelsche boekjes over Tuinbouw, in den zin der belgische Berichten aan de Landbouwers, zijn verkrijgbaar in het Ministerie van Landbouw, 4, Whitehall Place, London, S.W. In Holland worden de groenten die bijna noodzakelijk zijn in de keuken, zooals aardappelen, ajuin, enz, tegen hooge prijzen verkocht 1. Andere staan laag. De prijzen der bloemen zijn, wonder genoeg, tamelijk bevredigend. In de bloembollenstreek van Haarlem-Lisse heeft men voor September eene merkelijke stijging in den totalen uitvoer van Jacinthen, Tulpen, Narcissen, enz waargenomen, alhoewel de afzet naar de krijgsvoerende landen over't algemeen zeer is afgenomen.

---

[*] Par suite de l'abondance des matières, ces notes n'ont pu trouver place dans notre numéro précédent.

NOTICES OF BOOKS.

The Garden Under Glass.[*]

The title would lead one to expect a large volume, but its author disclaims for it either fullness or completeness, and on examination of its pages shows his disclaimer to be justified. One cannot shake off the feeling when perusing its discursive paragraphs that these have done duty elsewhere, and are here brought together in order to make a book. No other explanation seems to account for the fact that on one page the best dimensions for an amateur's greenhouse are stated to be 30 feet by 20 feet, and on the next page 35 feet by 18 feet, or that this isolated structure should require valves on the floor and return pipes to regulate the heat. It has to be remarked at the same time that the volume contains a vast mass of practical information suitable to the undeveloped condition of the immature in horticulture. Nothing better could be said in a small space on the treatment of Peach trees; the strictures on present-day slipshod training being to the point. But why it should be concluded of importance to protect the roots in winter with straw or bracken and cover these with corrugated iron is not so clear. Or, if the Fig is worth growing at all, why dismiss it in fifteen lines? Many other plants are treated equally inadequately.

Though cultivators may find the treatment of various plants to differ in some respects from theirs, there is no good reason for objecting to the points emphasised, and for Cyclamens, Begonias, Calceolarias, and Chrysanthemums, to mention a few, the cultural directions are such as ought to lead to success by the careful learner for whom the book is mainly compiled. There is also a fund of information respecting the technical parts of gardening, e.g., crocking pots, cuttings, layers, seed-sowing, potting, composts, stoking, shading, ventilating, and kindred subjects, which cannot but be useful. Here and there one comes across points of doubtful utility. Thus it is stated that an amateur's vinery 12 feet in width may contain a Grape vine at every 4 feet, with a Tomato plant between every two vines, a Fig tree on the back wall, and a trellis for plants in the body of the structure. Yet it must be patent to all that it is endeavours such as these to obtain much out of little that are one of the chief causes of the non-success of amateur gardeners. Then there is the assumption that, given an equal space to be occupied by staging, a larger number of plants can be arranged on tiers than on the flat, which is obviously impossible, the superfices being equal. There are also mistakes which might easily have been avoided. The Rev. D. Druery, for instance, is named as an authority and a writer on Ferns. The ancient Eupatorium ageratoides is recommended as a greenhouse plant; Moschosma riparium is noted in another paragraph under another name, praised in one and mentioned with depreciation in another. In addition to chapters on pests, manures, etc., as well as those already noticed with approbation, there is a good calendar of operations, and a rather incomplete glossary of terms used by gardeners. The volume is well illustrated with half-tone pictures of popular flowers, and the text even more profusely with cuts of dubious merit. *B.*

Purchase of Balloch Park, Loch Lomond.—The Town Council of Glasgow has agreed to the provisional order to purchase the land at Balloch, Loch Lomond, which has been under consideration for some time. The price (£30,000) is to be paid from the Common Good, and the annual cost of maintenance of the estate is to be paid from the rates.

The Week's Work.

FRUITS UNDER GLASS.

By W. Hedley Warren, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. Lord Rothschild), Buckinghamshire.

Vines in Pots.—Pot vines which were started last month are bursting their buds, and if the young shoots are of uniform growth the rods may be tied into their permanent position on the wires or trellis. Strong, young fruiting rods usually produce surplus growths, which should remain for the present to excite increased root action. As growth proceeds raise the temperature of the house to 60° by night, with an increase of 5° by day and 10° with sun-heat. These temperatures will suffice until the Vines flower, when an advance of 5°, both by day and night, is advisable, but do not maintain this higher temperature with the use of excessive fire-heat. Whilst the vines are in flower, a brisk, buoyant, and somewhat drier atmosphere should be maintained. Pollinate each bunch by the use of a dry camel's-hair brush at about midday, or whenever the atmosphere is most favourable to the operation. The shoots having made a second or third leaf beyond the fruit bunch, remove all growth beyond that point, and begin gradually to tie the shoots to the wires. Undue haste in bringing the shoots to their proper level is to be deprecated, or the young growths may become detached at their base. The fermenting materials of the hotbed in which the pots are plunged will need renewing from time to time, in order to maintain a steady bottom-heat. But before this is done mix and turn the fresh materials several times, to prevent a too rapid and excessive rise of temperature, which would injure the tender roots. A bottom-heat of about 70° is sufficient. A moist atmosphere can be easily maintained at this time of the year by damping the interior of the house frequently, and keeping the evaporating troughs filled with water. Overhead spraying of the vines must not be done too frequently, or the young growths may be injured. Do not keep the roots excessively moist before the vines are in active growth, when new roots will appear on the surface of the soil. At that stage the roots may be fed with weak manure-water at every other watering, or the surface of the soil may be top-dressed with a mixture of fibrous loam and decayed cow-manure.

Vines in Borders.—Where ripe Grapes are required at about the middle of May the vines should now be started, as they will take several weeks longer to mature their fruits than those grown in pots. Commence forcing by closing down the vinery, maintaining a temperature of 45° at night and 55° by day; syringe the rods twice daily, until the vines are breaking freely, when an increase of 5° at night and 10° by day may be allowed until the young growths are three or four inches long. Whenever the weather is favourable, or the inside temperature suitable, open the top ventilators of the house for several hours daily, to prevent a stagnant condition of the atmosphere. Maintain the borders in a moderately damp condition, and when moisture is necessary at the roots use water of slightly higher temperature than that of the house. On no account use cold water after the vines have started into growth, or the roots will receive a check. If some of the roots are growing in borders outside the house, see that they are adequately protected from heavy rains, and snow.

Late Vines.—Where Grapes are still hanging and the vines are ready for pruning it is advisable to cut the bunches with a portion of the wood attached, and put them in bottles filled with water, as directed in the calendar for January 31 last. The bunches of Lady Downes, Mrs. Pince, Prince of Wales, Appley Towers, and other late varieties may in this way be kept in a good condition for several weeks. The pruning and dressing of the vines was directed in the calendar for December 12, p. 385, but in the case of late vines it is always advisable to dress any cut surfaces with one or two applications of a styptic before the vines are washed and dressed. Cleanse all the woodwork of the vinery, remove all loose surface soil from the borders, and afterwards top-dress with fresh soil. Sling the vines from the wires, or bend them back, as may be most convenient, keeping the house dry and well ventilated until it becomes necessary to close it for starting the vines into growth again.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Zonal-leaved Pelargoniums.—Keep the house in which these flowering plants are growing fairly dry, and when watering avoid excessive wetting of the floor and stagings. Remove all faded flowers and leaves, and admit air for an hour or two each day when the weather is favourable. Plants that have finished flowering and are unshapely may be cut back and rested by withholding water. When they are started into growth again feed the roots with manure water, and shoots will grow quickly and flower abundantly during the spring. Old plants reserved for stock purposes must be grown with a view to obtaining from them strong, well-ripened cuttings in February and March.

Roses in Pots.—A selection of the stronger plants of Teas and Hybrid Teas to produce flowers in the spring should be made. Beyond the removal of dead wood and weak growths they require no pruning. Wash the pots and spray the shoots with an insecticide. Maintain a temperature of 45° to 50° to start with, and gradually increase the warmth as growth develops. Syringe the plants overhead daily. Occasional fumigations will keep aphis in check. The leaf maggot must be watched for and destroyed. Good remedies for mildew, which makes its appearance when high, dry winds prevail, are dusting the foliage with flowers of sulphur or fumigating with Campbell's vaporiser. Young Roses for next season's pot culture should be potted, and the pots plunged to the rims in a bed of leaves or coal ashes. It is wise to protect the branches of Teas and other tender Roses with bracken or similar material. A batch of the stronger plants of Hybrid Perpetuals may be started slowly, first pruning the shoots to prominent buds near the base. Syringe the plants overhead, but water the roots sparingly until growth commences.

Richardia (Calla).—If flowers are required at Christmas and during the New Year remove the more forward plants from the pits or cool house to a house with a temperature of 60°. Feed the roots with liquid manure, which will assist the flowers to develop quickly. Plants intended to furnish a succession to the earlier batch and to succeed Chrysanthemums may be forced gradually.

Spiraea.—S. astilboides floribunda is one of the best Spiraeas for pot culture. Cover the crowns with moss and keep the soil moist. When in full growth saucers containing water should be placed under the pots.

The Stove House.—Until the turn of the year the plants in the stove should not be excited into growth by high temperatures. A night temperature of 65° to 68° will be suitable, and in very cold weather a few degrees lower will be preferable to using excessive fire heat. Late in the evening fill the evaporating pans with water and damp the paths. Where foliage plants are used for house decoration the leaves should be sponged frequently. Do not use the plants in the dwelling-house for too long a period or the foliage will drop.

Hippeastrum (Amaryllis).—Select the finer bulbs, and of these soak the soil thoroughly with manure water. After this has drained away remove the surface soil with a pointed stick, taking care not to injure the roots. The compost to be used for top-dressing should consist of a mixture of rich loam and manure from a spent mushroom-bed, with the addition of a little sharp sand and bone meal. Remove all loose scales and brush the bulbs with a little Gishurst's Compound before plunging the pots in a mild hotbed. Very little water will be required at the roots until growth commences, but the syringe should be used frequently to promote a moist atmosphere.

---

[*] *The Garden under Glass.* By William F. Rowles (London: Grant Richards, Ltd.) Price 6s net.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson,
Oakwood, Wylam-on-Tyne.

The Cool House.—Odontoglossums are now in various stages of growth, and every care must be observed to assist the plants to mature their pseudo-bulbs. It will be found that, in most cases, it takes about three months (more or less according to the time of the year) from the time the flower scape may be first seen until the flowers expand. It is generally during this period that the roots are most active, and in many cases root-growth completed, so that while top growth may be considered as finished, other vital functions are taking place. Therefore whilst this period affords the grower an opportunity of assisting the ripening of the pseudo-bulbs by exposing the plants to the light and admitting air with caution, great care is necessary in applying moisture to the roots. The only time that Odontoglossums and allied genera may be considered dormant is the short period between the time the flower scape is removed and the appearance of the new growth; this is the period when the plants require least water, but even then the compost should not remain too long in a dry condition.

Insect Pests.—Small snails and slugs are the greatest enemies the Orchid grower has to contend with, and daily examination of the plants first thing in the mornings and again late in the evening, with the aid of a light, for the presence of the pests are necessary. Hollowed-out Potatos, Lettuce leaves, or small portions of bran meal placed about the staging and on the pots provide good feeding-grounds on which the creatures may be caught and destroyed. It is a good plan to raise the plants with flower scapes developing, on stands, that they may be better under observation. Small portions of cotton-wool wrapped around the base of the flower scape form difficult barriers for slugs to crawl over, and afford some protection. The house should be vaporised or fumigated about once a fortnight for the purpose of destroying thrips. Spraying may be discontinued for a few weeks, as moisture evaporates slowly at this season. Ventilate the house freely whenever the weather is favourable, and it is preferable to employ sufficient fire-heat to permit of ample ventilation rather than to allow the atmosphere to become stagnant.

THE FLOWER GARDEN.

By W. Crump, Gardener to Earl Beauchamp, K.C.M.G.,
Madresfield Court, Worcestershire.

Winter Effects.—By a judicious grouping and blending of coloured foliaged shrubs and trees, carpeted with winter-flowering plants, such as Heaths, the pleasure gardens may be made interesting in winter. A suitable background is always an important feature to show off bold masses or groups of hardy flowers, which should include kinds that bloom both early and late in order to have flowers over as long a period as possible. At Madresfield we have bold groups growing on sloping banks, and some of the plants, including Ericas, are now full of bud and nearly in flower. E. carnea gives a mass of warm, rosy-crimson colour that is much appreciated in mid-winter, and there is a fine white variety of this Heath. Erica codonodes or lusitanica, planted as specimens or dot plants near to the beds of E. carnea, are specially effective, growing 5 to 6 feet in height and as much through. The plants will shortly be furnished with massive spikes of pure white flowers that appear in fine contrast with the beautiful soft green foliage. A word of precaution must be offered, for when the branches become laden with snow there is a danger of them breaking, as the wood is extremely brittle. Therefore it is well to at once support the best branches with stout stakes. The soil for Heaths must contain peat, or, at all events, be absolutely free from chalk or lime.

Daphne collina major is in full flower, and the blossoms fill the air with their perfume. Now is a suitable time to prepare beds for these plants by removing the soil to a depth of 1½ foot, and replacing it with fresh material of a peaty nature. There will thus be time for the soil to become settled before the planting season, which will be two months hence.

Pleasure Grounds.—Make the pleasure grounds tidy by collecting all fallen tree leaves and rubbish which have collected amongst the bushes, shrubs and hedges, otherwise the next high wind will litter them about again. If the note-book has been used with a view to jotting down suggested improvements now is a suitable opportunity to prepare beds and borders by deeply trenching and heavily manuring the soil.

Box Edgings.—The plants forming box edgings are apt to grow ragged, and some may fail altogether, leaving gaps. If this is the case take up a portion of the hedge, pull it into small pieces, and re-plant. Make the soil very firm at the back of the plants, taking a small trench out of the front side to allow the young plants to rest against the solid earth at the back. Keep the top of the hedge true and level, place the soil amongst the roots carefully, and tread it firmly.

Standard Bedding Plants.—Standard trained plants required for bedding next summer must receive attention. Calceolaria Burbidgei, Cineraria maritima, Lantanas, Fuchsias, Heliotropes, Salvias, and others that are used for the purpose should be potted on as required and grown close to the roof-glass. The hot-water system should be used during the daytime to permit of a gentle circulation of fresh air always, but keep the house cool at night. Under this treatment the plants will make sturdy growth.

THE KITCHEN GARDEN.

By R. P. Brotherston, Gardener to the Earl of
Haddington, Tyninghame, East Lothian.

Parsley.—The Parsley crop has not been a success owing to the dry season, and the outdoor supply will soon be finished. Plants in pits will produce a crop of young leaves very freely, though it is well at this time of the year to keep the pit as cool as possible. Meantime the plants in the open should be examined with a view to removing decaying leaves. Stir the soil if it is in a condition for working, and have ready some simple means of protecting the plants from snow and frost. A few garden mats will cover a large area, and snow is quite easy to remove by lifting it along with the mats.

Artichokes.—If it is intended to trench the ground in which Artichokes are planted the crop may be lifted and stored. No vegetable requires less care to preserve it, and I merely dig a sufficient space along the base of a wall into which the roots selected for eating are placed so as to slope at an angle towards the wall, covering the tubers with ashes to a depth of about nine inches. The new crop can be planted at any time now, but do not select very small tubers for the sets. Pheasants are very fond of Jerusalem Artichokes, and the small tubers may be used as food for them. I invariably find that the old, red-skinned variety produces the largest crop, though the tubers are less well-shaped than those of the white-skinned variety.

Cauliflowers.—Plants raised from seeds sown in a cold frame in October must be preserved in a perfectly clean and sweet condition. Should foreign growth have developed on the soil it must be removed, lifting it in good-sized flakes. Afterwards spread a thin layer of fresh material over the surface. Sand that has been heated for several hours in a hot oven or by other means is one of the best materials for keeping down algal growth, but superheated soil will do equally well, the period when such growths are deleterious being over in the course of the next five or six weeks. While the plants are still small dryness at root, the temperature being at the same time low, will do less harm than would the application of water. Plenty of ventilation is essential, and in favourable weather the lights may be removed entirely, for a cool treatment is almost essential to success with Cauliflowers throughout the winter. Older plants may be grown under bell-glasses or cloches without ventilation. Those of the same age raised from seeds sown in September and planted at the base of a south wall may need attention in the simple matter of removing decaying leaves and stirring the soil with a pointed stick or label. These, too, will be benefited by an application of fresh soil to the surface, and a sprinkling of hot lime above that, should slugs prove troublesome.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote,
Eastwell Park, Ashford, Kent.

Strawberry Beds.—When the ground in which Strawberries are planted is sufficiently dry for working fork it lightly, first removing the weeds and rubbish. Take advantage of frosty mornings to wheel manure on to established beds, for the plants will be benefited by a heavy mulching of rotted farmyard manure. The Strawberry is a gross feeder, and well repays attention in this respect. The manurial properties of the dung will be washed into the soil by the winter rains, so that when the roots become active in the spring the plants will be stimulated into making healthy and vigorous growth. The varieties should be labelled correctly, for then there will be no confusion when taking the runners. It is interesting to note how different varieties behave in similar conditions, and, as with other fruits, certain varieties succeed in one garden and are practically worthless in another. The new beds that were planted last summer will not require manuring if the ground was prepared thoroughly and well enriched with manure. The present is a suitable time to select ground for the new beds next season. The soil should be trenched deeply, working in a liberal dressing of rotted manure as the work proceeds. Throw out and burn the roots of all perennial weeds, as otherwise these would cause endless trouble next season. The soil should be left rough on the surface throughout the winter. Even if the ground is not likely to be required till next season's runners are ready, it is advisable to trench it during the winter rather than in the summer, for it may be cropped with an early vegetable such as early Potatos, which may be lifted in July. If the Strawberry plants are being wintered in pots the ground will be settled, and in a suitable condition generally for planting in the spring.

The Fruit-Room.—Cleanliness and tidiness should be duly observed in the fruit-room. Give constant attention to the work of removing decaying fruit, and if the stock is examined systematically symptoms of decay can be noted early and the affected fruits utilised before becoming absolutely useless. Never warm an Apple-room by fire-heat if it can possibly be avoided. The temperature and atmospheric moisture of the fruit-room should be kept as uniform as possible, and the air changed by careful ventilation. Dry conditions will soon render late varieties useless through shrivelling.

General Work.—Do not plant when the ground is wet and pasty. Fasten all trees and bushes to stakes as soon as they are planted, or they will be swayed out of position by high winds. In planting fruit trees do not mix animal manures with the soil but rather use a little light manure as a surface mulch. This will afford protection to the roots from frost, and keep the ground moist when drying winds prevail. If trees arrive from the nurseries during wet weather they should be unpacked and heeled in temporarily until the weather improves. The work should be done carefully, as sometimes they have to remain like this for several weeks. Some light litter should be at hand for use as protection from frosts. If the trees are delivered in frosty weather it is best not to unpack them but to leave the package intact in a shed or cellar until the weather is milder. Stakes of all kinds for fruit trees and bushes should be prepared under cover during bad weather. Wrap a piece of packing, old hose-pipe, or similar material around the stems of fruit trees where they are tied to the stakes.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Editors and Publisher. — *Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 38.5.

ACTUAL TEMPERATURES :—

LONDON, *Wednesday*, December 16 (6 p.m.) : 44°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London : *Thursday*, December 17 (10 a.m.); Bar. 29.4; Temp. 46°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

MONDAY AND WEDNESDAY—

Rose Trees, Palms and Aspidistras, Hardy Perennials and Bulbs, at Stevens' Rooms, King Street, Covent Garden.

Dutch Bulbs, Herbaceous and other plants, by Protheroe and Morris, 67 and 68, Cheapside, E.C., at 12.

TUESDAY—

827 cases of Japanese Liliums at 1, miscellaneous Bulbs at 12, at Protheroe and Morris's rooms.

Roses, at Protheroe and Morris's rooms, at 1.

WEDNESDAY—

Azaleas and other plants, at Protheroe and Morris's rooms, at 4.

On Nomenclature and Anger. We regret to find one of the leading horticultural papers in Germany—*Möllers Deutsche Gärtner-Zeitung*—admitting to its columns contributions from German gardeners of a kind which, though they find their way into the irresponsible press of all countries, are to be deplored when they appear in responsible journals.

Some of the proposals made by these contributors involve matters of taste only, and these may be left without comment. For example, one contributor points out that since the German language is so rich in good designations it would be desirable to translate into German the French or English names of novelties. Thus the Tea Rose Beauté de l'Europe would appear as Schönste von Europa, the Dahlia White Queen as Weisse Königin, and Soleil d'Or as Goldsonne.

If the object were merely to popularise these varieties no one would be likely to take very serious exception to the proposal; but the writer proceeds to suggest that Germans should in the future avoid all foreign produce. This fiscal proposal is, of course, one which has many advocates, and is one on which it is none of our business to offer comment; but, taken in conjunction with the rechristening proposal, it suggests a certain moral obtuseness as well as patriotic fervour. To profess to avoid the importation of foreign produce and to rename new varieties appears to the ordinary mind not obsessed by anger a dishonourable profession.

That we have not put too severe a construction on the proposal is indicated by the trend of this correspondence in the same German periodical. Thus, after extolling the beauty of Begonia Gloire de Lorraine a writer takes the opportunity of suggesting that its name shall henceforth be Ruhm von Lothringen or Ruhm von Mülhausen. We have learned much recently of German culture, but confess surprise to discover that even its extravagant claims are outbid by those of German horticulture.

The same correspondent suggests, and with perfect propriety, that in future all German novelties shall bear German names. If this excellent practice has not been followed generally by Germans in the past it is, perhaps, to be attributed less to admiration of the French and English languages than to a desire to facilitate the sale of the novelties in foreign countries. If in future Germany desires to retain her novelties for her own exclusive use we none of us shall have any ground for complaint; but if she wishes to sell them to us we, of course, shall be free to follow German precedent and to give to the novelties such names as may please us. This, however, would be a pity, for the original name should be an indication of the country of origin and a tribute to the skill of the raisers of the new plants.

The correspondent just quoted lets his patriotic anger obscure his sense of honour when he suggests that German horticulturists should receive foreign novelties, "naturalise" them by growing them in testing stations for a couple of years, and then issue them with German names. The writer, in concluding, begs God to grant that the new spirit of German unity, German common sense, and German discrimination may reach her horticulture. If the new spirit leads to these outbursts we may hope that when cooler moments come the German horticulturists may prefer to retain the old—the spirit which made for brotherliness and friendly emulation and mutual respect. Anger has its privileges, but these proposals are a breach of privilege, and will commend themselves to no sober man of whatsoever nationality.

Coloured Plate.—The subject for the Coloured Plate to be published with the next issue is Pyracantha crenata.

Our Supplementary Illustration.—With our number for November 21 last was issued a supplementary illustration showing a colony of tree ferns (Hemitelia) growing wild in the National Botanic Garden of South Africa. The plate in our present issue depicts Aloë succotrina, Lam. In regard to this latter picture Professor H. W. W. PEARSON writes as follows :—"It is not easy when standing beneath the tree ferns to realise that the subject of the second picture is situated not more than 150 feet higher up than the tree ferns. This picture shows the lower part of a group which is hardly less than five acres in extent. It is situated on a steep talus of sandstone boulders, some of enormous size, which at some distant period fell from the steep face of Table Mountain. The locality faces to the east, and therefore receives all the morning sunshine that is not intercepted by the trees. The sun disappears behind the mountain early in the afternoon in the winter, when the Aloës are in flower so early as 3 o'clock. The rainfall can hardly be less than 60 inches per annum, falling principally during the flowering season (May to July). Altogether the locality is one which would probably be avoided by a cultivator in search of a suitable place for growing succulents. Nevertheless the plant is evidently thoroughly well adapted to the conditions existing there. The trunk produces a great array of thick roots which are for the most part exposed on the surfaces of the rocks; none of them appears to penetrate far into the humus soil which has accumulated on and among the boulders. The Aloë, in fact, avoids the retention of water round the roots, though by a method different from that usually adopted by the cultivator who is successful in growing South African succulents in the open under a heavy rainfall. Most of these plants seem able to accommodate themselves to a high degree of atmospheric humidity provided that their temperature and light requirements are satisfied and the aeration of their roots is not unduly interfered with. With regard to the former, Aloë succotrina is not so insistent on light as Aloës usually are. It may be that the trees are encroaching to the detriment of the Aloës, but many are apparently flourishing in shade almost dense enough for a Hemitela. The predominant tree in this association is Olea verrucosa, Link. (large, rather indistinct mass on the right), associated with which are Canonia capensis, L.; Maurocenia pangularia, Mill.; Royena lucida, L.; Plectronia sp., etc. The dampness of the atmosphere is attested by the profuse growth of Usnea and other lichens and mosses, and of a few vascular epiphytes, including Polypodium lanceolatum and a Holothrix on the trees and boulders. Aloë succotrina is only recorded with certainty from the locality in which the photograph was taken, and from one other, a few miles further south on the same range.* It is, however, quite probable that it may prove to be of wider occurrence. As its name implies, it was supposed to be a native of Socotra, and, assuming that its reference to A. succotrina, Lam., is correct, it illustrates the difficulty of determining the origin of many succulents in cultivation, particularly of species introduced by the early travellers. In these two natural associations, situated so near together and yet so different in their physiological requirements, Kirstenbosch offers an interesting oecological problem, and, at the same time, possesses a guarantee that it can furnish a suitable home to the majority of the growth-forms which go to the making of the varied vegetation of South Africa."

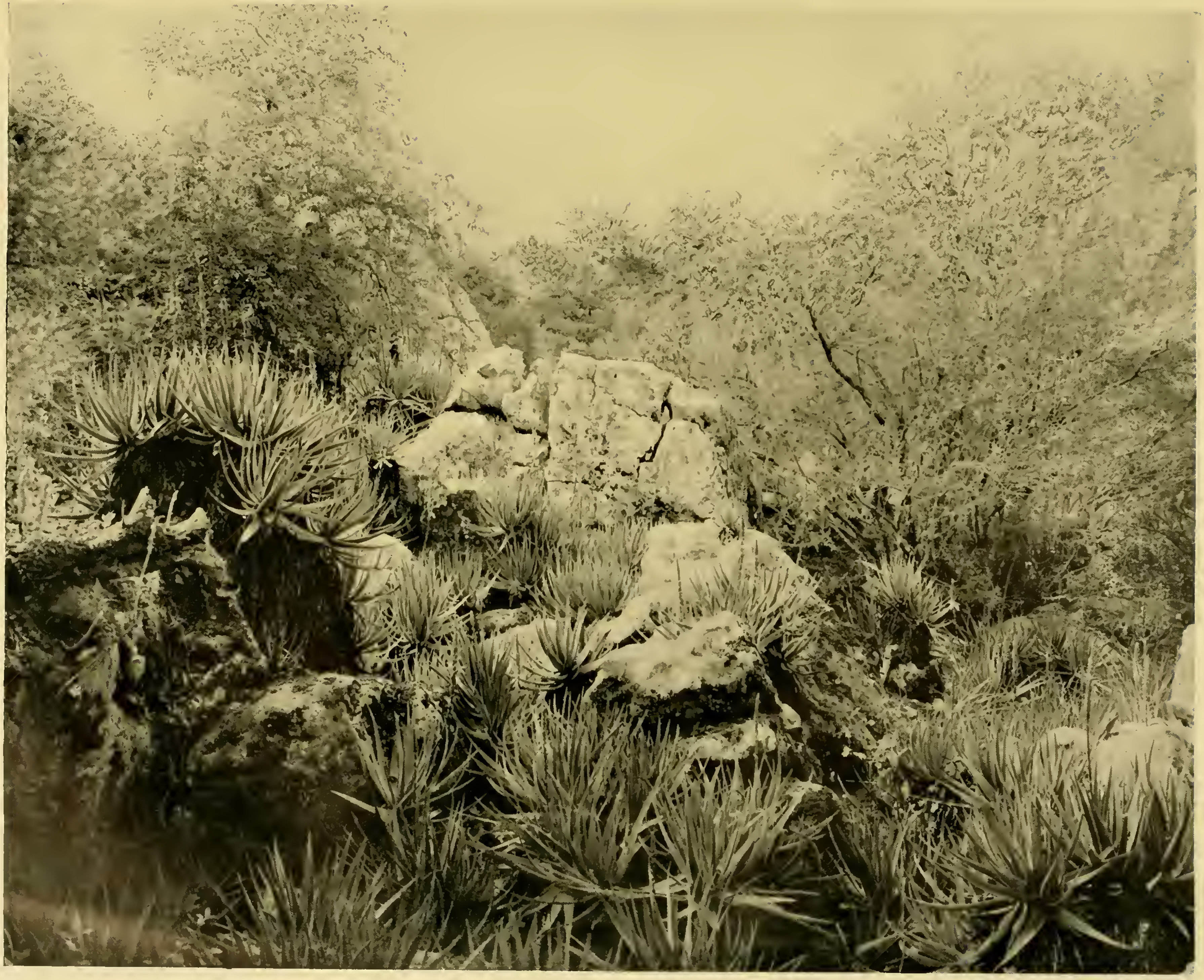
WAR ITEMS.—In view of the difficulties and delays which are liable to arise under present conditions in the transport of goods by rail, the Board of Agriculture and Fisheries consider that farmers (and gardeners) would be well advised to place their orders for fertilisers and other requirements so as to allow ample time for delivery.

—— The usual fortnightly meetings of the National Horticultural Society of France have been suspended since the war began. We now learn from Paris that there will be a partial resumption. The report is that "the Horticultural Society is going to revive somewhat; the meetings, beginning with the month of January, will be held once a month—that is to say, on every fourth Thursday. They will then bring up exhibits as usual. When we gather together we shall draw up a list of our members who are wounded, dead, or on active service." A letter from Senior Vice-President M. A. TRUFFAUT on this subject is printed on the French Page of this issue.

—— In connection with a circular received from the Board of Agriculture for Scotland, the Corporation of Glasgow appointed a special committee to consider whether any ground belonging to the city could be utilised for the purpose of

---

* Marloth, R., *Trans. S. A. Phil. Soc.*, XVI. (1906), p. 213.



ALOË SUCCOTRINA IN THE WILD RESERVE OF THE NATIONAL BOTANIC GARDENS, SOUTH AFRICA.

cultivating garden produce by unemployed labour. This committee has now reported to the effect that there are six acres belonging to the Tramways and Cleansing Departments which might be used for this purpose. As no unemployed labour can at present be obtained through the Distress Committee no action is to be taken for the time being.

Kew Guild Roll of Honour.—A list of members of the Kew Guild now serving with the colours is in course of preparation for publication in the next issue of the *Journal*, to be published in January. Information, to include the name of the regiment to which Kew men are attached, from members or their friends should be sent to the secretary, Mr. A. Osborn, 191, Kew Road, Richmond, Surrey. The present staff intends to entertain on New Year's Day the wives and families of their colleagues who have joined the forces; the company will number about 150 persons.

Produce Market in Holland.—In our issue for the 12th inst. (p. 387) we gave a few particulars on the condition of the trade in vegetables, fruits and flowers in Holland, and remarked that the price of flowers—luxuries which it might be thought would be less in demand in war-time—was almost satisfactory. Another curious fact which has come to our notice is that the number of bulbs exported this year is actually in advance of that for last year. The figures are given in the *Weekblad voor Bloembollencultuur*, and show that in September, 1913, 6,969,700 kg. were exported, as against 8,104,800 kg. in September, 1914. The exports to each of the belligerent nations, however, have perceptibly decreased. It would be premature to predict from the increased volume of exports that the position of the exporter will necessarily be a favourable one, as the prices are probably abnormally low, and fears are expressed that it will be difficult to obtain payment in the case of certain of the credit transactions.

A Veteran Gardener.—Mr. Charles Ross, V.M.H., late gardener to Colonel Archer Houblon, of Welford Park, Berkshire, will celebrate his ninetieth birthday on Tuesday next, the 22nd inst. Many of our readers who knew Mr. Ross in his more active days will remember that he retired from Welford in 1908, and in our issue for October 24 of that year details were given respecting many of the new Apples raised by Mr. Ross whilst gardener at Welford. Mr. Ross was already a head gardener when peace was proclaimed in 1856, after the Crimean War, an occasion which he celebrated by planting a Sequoia gigantea on the lawn at Fairlawn, Tonbridge, Kent. We congratulate this worthy representative of our craft, and wish him continued health. His present address is 28, Westbury Road, Westgate-on-Sea, where he resides with his eldest son.

Perpetual-flowering Carnation Society's Show.—We are informed that on the occasion of this show, which was reported on p. 376, the number of competitors was 23, and there were four exhibits in the class for the "Geo. Monro, Junr.," Cup. Mr. W. E. Wallace, Eaton Bay, was awarded a large Gold Medal, Mr. A. F. Dutton a Gold Medal, and Sir Randolf Baker, Bart., a Silver Medal for non-competitive exhibits.

The Veitchian Managers.—The departments in the Veitchian nurseries, now nearing extinction, were all managed by men of great experience and proved ability. The name of John Heal is a household word in gardens, and everyone wishes him joy in his retirement from active work. Mr. A. Dawkins, for nearly eighteen years manager of the seed department, has entered business on his own account as a seed and bulb merchant in the King's Road, Chelsea. Mr. J. C. Allgrove has purchased part of the nursery and stock of the fruit department at Langley, of which he had charge, and will carry on the business of a fruit nurseryman at Middle Green, Slough. Mr. George Harrow is at present at his old post as manager of the Coombe Wood Nursery, but his appointment will terminate on the 24th instant. He will then commence business as a specialist in arboriculture and other phases of gardening in which he has expert knowledge. Mr. Charles Weeks, for many years manager of the soft-wooded indoor plant department, and latterly of the whole of the plant nursery at Feltham, is a skilful cultivator of shrubs, Carnations, Chrysanthemums, and other flowers. Mr. Weeks is now seeking an engagement of a similar nature to that he has filled so long. Mr. George Tivey, who had charge of the Orchids, Nepenthes, and other stove plants at Chelsea, and was responsible for some of the finest exhibits at the shows, is also desirous of obtaining an engagement.

The Potato Crop.—According to the agricultural report of the Board of Agriculture and Fisheries for December, the total production of Potatos in England and Wales is returned at 2,955,299 tons, which is some 60,000 tons more than in 1913. The yield per acre is estimated at 6.40 tons, slightly less than last year, but a quarter of a ton above the average. There appears to be a considerable amount of disease in the north, more particularly in the chief Potato-growing district of Lancashire, where it is estimated that not less than half the crop was affected. In Lincolnshire, however, and in the Midlands and south generally, little damage from disease has been reported.

Customs Formalities in Peru.—Exporters to Peru should make a note of the fact that the acceptance in that country of seedlings, plants, cuttings, or shrubs is subject to the possession by the exporter of a licence, issued by the Agricultural Division of the Ministry of Labour. Furthermore, these articles can only enter the country through the Customs office at Callao or the post office at Lima.

"Botanical Magazine."—The following plants are illustrated and described in the issue for December:—

Clematis Armandii, tab. 8,587.—This plant formed the subject of the Supplementary Illustration in the *Gardeners' Chronicle*, July 8, 1905, and a smaller illustration was given in the issue for May 17, 1913, p. 322. Mr. E. H. Wilson introduced the plant from Central China, and there appears to be two forms in gardens, one with superior flowers. The blossoms are white and produced in dense clusters; they open in April, and Mr. Beckett, in *Gardeners' Chronicle*, May 17, 1913, p. 322, stated that they are apparently not injured by frost, although the *Botanical Magazine* states that "the species appears to call for wall treatment in this country."

Pleione pogonioides, tab. 8,588.—This pretty Orchid, with rose-coloured flowers, is a native of China, and was discovered by Mr. T. Bullock on wet rocks at an elevation of 3,000 feet. It was first placed in the genus Pogonia by Dr. Hance, and later in Coelogyne by Mr. Rolfe, whilst one of its forms has been described under the specific name Henryi. The cultural requirements are the same as for P. praecox.

Crataegus pubescens stipulacea, tab. 8,589.—Crataegus pubescens is the Tejocote or Mexican Hawthorn, and was first noted by Hernandez, who resided in Mexico in 1571-1577. De Candolle named it Crataegus mexicana two years after it had been described as Mespilus pubescens. The plant exhibits great variation, hence it has numerous synonyms. The species has been in cultivation in this country since 1824; there is a tree in Kew Gardens about 15 feet high, and it is described as one of the handsomest of Thorns. The yellow fruits hang sometimes as late as February.

Salvia longistyla, tab. 8,590.—The flowers of this species bear some resemblance to those of S. coccinea, but the calyx tube is longer. The colour is rosy-pink and the long, loose panicles are sometimes 2 feet long. The plant is tender, but it grows too vigorously to make a good greenhouse subject, notwithstanding that it blooms in winter.

Ceratostigma Willmottianum, tab. 8,591.—We saw this new species flowering in the nursery at Kew this autumn alongside the older C. plumbaginoides, which it much resembles save that the flowers are paler and the leaves smaller and of a lighter green. The older species is better known in gardens as Plumbago Larpentae, the name bestowed by Lindley when it was first introduced to this country. As the new plant is hardy and grows as well as the other it should prove an acquisition for gardens, especially as the flowering season extends from July to December. Whilst the plate shows a well-marked white centre in the flower, no reference is made in the text to this feature, the limb of the corolla being described simply as "bright-blue."

Apple Canker.—The prevalent but not universally accepted view that canker in Apples is due to the effects of the fungus Nectria ditissima receives confirmation from the investigations of S. P. Wiltshire, described in abstract in the Annual Report (1913) of the Research Station, Long Ashton, Bristol. The author finds that the wound parasite Nectria ditissima invariably induces infection if the wound through which it enters is deep enough to penetrate to or nearly to the wood; otherwise, that is, in the case of shallower wounds bark (cork!) forms and the parasite is excluded from the living tissues. It also appears that the disease is generally localised, though whether the fungus is at all capable of spreading from one part to another has not yet been determined. In any case, Mr. Wiltshire is clear that there is no danger of communicating the disease by grafting provided that the graft be taken from a healthy shoot.

Bordeaux Mixture and Woburn Paste.—Experiments carried out by Mr. Spencer Pickering and described in the fourteenth annual report of the Woburn Experimental Fruit Station lead to the conclusion that Woburn Bordeaux paste is a more economical fungicide than is ordinary Bordeaux mixture. The paste is prepared by precipitating a solution of copper sulphate with lime. To this end clear lime water is added until a faintly alkaline reaction is obtained and the precipitate is filtered and dried. It requires only to be mixed with water to be ready for use. A difficulty which presented itself in the commercial preparation was that in some instances the paste underwent decomposition. This defect has now been remedied by Mr. Spencer Pickering. The result of experiments to test the relative effects of the mixture and the paste on late blight of Potatos is to show that 15 to 16 lbs. of the paste is as efficacious as Bordeaux mixture made from 8 lbs. of copper sulphate and 8 lbs. of lime, the paste and the mixture being dissolved in a similar quantity of water—viz., 100 gallons. This result is the more noteworthy in that the paste contains from five to six times less copper than does the mixture. The reason for the more effective action of paste is attributable to the fact that whereas all the copper contained in it is liberated gradually in soluble form, much of the copper in the ordinary mixture is on liberation re-precipitated by the lime contained in the mixture.

Wood used in the Manufacture of Gunpowder.—Known to commerce as Dog wood, and imported generally from the Continent, the source of the pure carbon used in the manufacture of gunpowder is the wood of Rhamnus Frangula. For coarser kinds White Willow and Alder are employed. A writer in the *Pharmaceutical Journal*, in drawing attention to these facts, points out that Rhamnus Frangula is widely distributed in woods in England, and suggests that it might be planted profitably in the New Forest and in other districts. The bark would find a use in medicine. Perhaps the chief reason for the use of this species of gunpowder-making is its low percentage, 0.51, of ash, as against 0.83 in Alder. It is believed that Roger Bacon used Hazel for his gunpowder.

The Flora of New Guinea.—The first part of the botany of Dr. H. A. Lorentz's expedition to Dutch New Guinea was noticed in the *Gardeners' Chronicle* for February 26, 1910, and succeeding parts have been briefly announced as they appeared. Part VIII. is now published, and completes a quarto volume of 1,048 pages and 188 plates, conveniently arranged for binding in three parts. In this volume 106 families, including Orchids and Ferns, are dealt with by various botanists. This last part contains the Liliaceae by Dr. Hans Hallier, and the Meliaceae and Piperaceae by Dr. Casimir de Candolle. Dianella is the leading genus of the Liliaceae, with about a dozen species, seven of which are new and figured. The other genera of Liliaceae are: Schelhammera, Luzuriaga, Thysanotus, Cordyline, and Dracaena. About a dozen species of Piper are described as new and as many Meliaceae, belonging to the genera Dysoxylum, Chisocheton, and Aglaia—eight of them to the last. The figures of the Dianellas are from photographs of the herbarium specimens described.

Publications Received.—*Hardy Roses: Their Culture in Canada.* By W. T. Macoun; *Plum Culture in Canada.* By W. T. Macoun; *The Planting and Care of Shade Trees.* By F. E. Buck, B.S.A.; *Summary of Results: Division of Horticulture,* 1913. Prepared by W. T. Macoun; *Report from the Division of Horticulture,* for year ending March 31, 1913. (Bulletins issued by the direction of Hon. Martin Burrell, Minister of Agriculture, Ottawa, Ont.)—*Report of the Dairy and Cold Storage Commissioner* for the year ending March 31, 1914. (Ottawa: J. de L. Tache, Printer to the Government.)—*Transpiration and the Ascent of Sap in Plants.* By Henry H. Dixon, Sc.D., F.R.S. (London: Macmillan and Co., Ltd.) Price 5s.—*A Manual of Weeds.* By Ada E. Georgia. With 385 illustrations by F. Schuyler Mathews. (New York: Macmillan Co.) Price 8s. 6d.—*Adventures Among Wild Flowers.* By John Trevena. (London: Edward Arnold.) Price 7s. 6d.—*A Book of Simple Gardening.* By Dorothy Lowe. (Cambridge University Press.) Price 2s.—"*The British Fern Gazette.*" Edited by Charles T. Druery. Vol. 2, No. 22. (Westmoreland: The British Pteridological Society, Kendal.)—*Twenty-Seventh Annual Report of the Agricultural Experiment Station of Nebraska.* (U.S.A.: The University of Nebraska, Lincoln, Nebraska.)—*Thirty-Seventh Report of the Connecticut Agricultural Experiment Station*, for the year 1913. (Published by the State of Connecticut.)—*Proceedings of the Academy of Natural Sciences of Philadelphia.* Vol. LXVI. (The Academy of Natural Sciences of Philadelphia).—*The Storage and Use of Soil Moisture.* (Bulletin issued by the Agricultural Experiment Station of Nebraska, U.S.A.)—*The County Farm Bureau.* By B. B. Crocheron. (Circular 118, issued by the College of Agriculture, University of California, Berkeley.)—*Design in Landscape Gardening.* By Ralph Rodney Root and Charles Fabens Kelly. (New York: The Century Company.) Price $2.00.—*The Genus Pinus.* By George Russell Shaw. 1914. Cambridge, U.S.A.: William Wesley and Son, London, W.C.) Price £2 12s. 6d.net.—*Trees: A Woodland Notebook.* By the Rt. Hon. Sir Herbert Maxwell, Bt., F.R.S., LL.D. (Glasgow: James Maclehose and Sons.) Price 21s. net.—*Live Stock Journal Almanac,* 1915. (London: Vinton and Co., Ltd.) Price 1s.—*Annual Report of the Bureau of Industries for the Province of Ontario,* 1913. (Toronto: L. G. Cameron.)—*A Peculiar Negative Correlation in Oenothera Hybrids.* By George Harrison Shull. (Reprinted from *Journal of Genetics*, Vol. IV., No. 1, June, 1914. Cambridge: The University Press.)—*The Longevity of Submerged Seeds.* By George Harrison Shull. (Reprinted from *The Plant World*, Vol. XVII., No. 11, November, 1914.)—*A Bacterial Disease of June Beetle Larvae, Lachnosterna spp.* By Zae Northrup; *Utilization of Muck Lands.* By C. S. Robinson; *Studies in the Range of Variation of the Per Cent. of Butter Fat in the Milk of Individual Cows.* By A. C. Anderson; *Sweet Clover.* By V. M. Shoesmith. (Bulletins issued by the Michigan Agricultural College Experiment Station. Mich.: East Lansing.)—*Sex-Limited Inheritance in Lvchnis dioica, L.* By George Harrison Shull. (Reprinted from *Zeitschrift für induktiv Abstammungs und Vererbungslehre*, 1914. Vol. XII., No. 5. (Gebrüder Borntraeger in Berlin, W. 35.)

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

A Selection of Apples.—Mr. Molyneux uses the pruning knife ruthlessly on Mr. Weston's list of Apples, and asks why it is not equally sound practice for the private grower to limit his sorts reasonably and grow more trees of the better varieties, as does the market grower. Mr. Weston, in the article in question, fully answers Mr. Molyneux's question before it is asked, giving several excellent reasons for his advice, with which, as one who has to provide a succession of culinary and dessert Apples, I am in full agreement, finding it more interesting to my employers to have a fair variety of good sorts instead of large quantities of only a few. There is then, as Mr. Weston says, less risk of a blank in a bad season. There are several others equally as good, and some probably better, for certain soils, as those mentioned by Mr. Molyneux, and it is certain that hardly any two keen growers would name the same varieties in a selection of, say, 30 sorts for early, mid and late season use. Mr. Molyneux considers Grenadier the finest of all early kitchen Apples. I have a few young cordon trees of this sort which have not done much as yet, so I cannot fairly compare it with the fine large, clean and early fruit I get yearly from Early Victoria and Lord Grosvenor, or even from an old tree of Lord Suffield, although I should not advise planting the last named. Domino is also very satisfactory, followed by Loddington, an open bush-tree, which bears a large crop of very fine Apples each season. Warner's King is also much liked in the kitchen. Of early dessert varieties I prefer Beauty of Bath, Gladstone, Irish Peach, followed by Worcester Pearmain and King of the Pippins, to the pretty-looking but somewhat dry fruits of Lady Sudeley; but I have to depend on the last until some young trees of various other sorts come to full bearing. Mr. Molyneux states that no better late Apples can be found than Bramley's Seedling, Dumelow's Seedling (Wellington), Newton Wonder, with Lane's Prince Albert to precede them. I should be badly off if I had to depend on any of these varieties except Dumelow's Seedling for late fruits. These do well with me, with the exception of Dumelow's Seedling; but I generally have a good crop of Annie Elizabeth, which is second to none in quality and appearance. Another very useful Apple, Seaton House, is a regular cropper; the trees occupy but little room, making nothing but fruit-spurs, and there is no finer Apple for cooking than this variety. Betty Geeson is another valuable sort, whilst a few less juicy varieties, such as Hambledon Deux Ans, Bess Pool, Hanwell Souring and Northern Greening help to prolong the season. The advice to grow Cox's Orange Pippin for a late supply will surprise most gardeners. I do not see why Ribston Pippin and Blenheim Pippin should be entirely discarded in favour of Cox's Orange Pippin; and other good late Apples are Adams's Pearmain and Lord Burghley—the appearance and flavour of the latter leave nothing to be desired; Sturmer Pippin comes in useful after these are over. The only fault of the variety Lord Burghley is a tendency to canker, but hardly more so than Cox's Orange Pippin does here, and also Charles Ross, the fruits of which are large enough for a meal by themselves. There are, of course, several other excellent Apples which none of us has mentioned. *A. Shakelton, Forde Abbey Gardens, Chard.*

—— I note Mr. Weston's defence of the list of varieties given by him on p. 353 for exhibition and home display in the fruit-room. I like the tone of his reply, which is such as to render argument pleasurable. It is evident that in compiling the list of fifty-six varieties of Apples Mr. Weston had in mind the greatest amount of display possible with that number. From the "big grower's" point of view, that selection may be acceptable; but what about the small gardener, who has not the opportunity either to grow the trees or to display the fruit? Many small growers are readers of the *Gardeners' Chronicle*, and I feel sympathy with the members of this class who read this large selection of varieties. I take it, moreover, that Mr. Weston, like myself, writes mainly for the beginner; those who have gained experience do not require so much advice. There are not many employers who desire to encourage the growth of so many varieties purely for the sake of competition at shows or exhibition at home. The tendency is towards utilitarian practice. When an employer and his family obtain sufficient supplies of cooking and dessert Apples their principal requirements are satisfied, and they would not care for dessert Apples inferior in flavour to Cox's Orange Pippin at a season when that Apple is obtainable. Employers prefer a desirable Apple to eat to one purely to look at, like Wealthy. My advice has always been to grow more of Cox's Orange Pippin and less of others which have little to recommend them beyond appearance. This Apple will succeed almost anywhere—if the grower will adapt himself to circumstances, especially in the matter of soil. Furthermore, what Apple is better, even in appearance, than a well-grown Cox's Orange Pippin? I have not yet come across anyone who is tired of this Apple, even if no other has been available for three months. Mr. Weston apparently does not class Grenadier as an early Apple, but on August 1 I picked fruits of this variety from four-years-grafted trees, measuring 3 inches in diameter and 3½ inches high. Can he name another variety that will produce such fruit at that date? A market grower near here, with 300 acres of fruit, pins his faith to this Apple for his early supply, and obtains enormous quantities of fruit at the end of July. Mr. Weston says in defence of his list of dessert varieties "numbers are planted first because they are appreciated at home." I wonder what for, unless to look at, in the fruit-room! Would Mr. Weston offer fruit to a connoisseur to taste in the fruit-room, if a variety were asked for by reason of its appearance alone? Such a variety might easily be Lord Burghley, Brownlees's Russet, Lord Hindlip, Reinette de Canada, Melon Apple, Allington Pippin, Wealthy, Ashmead's Kernel or King Harry! and would be especially disappointing after a good sample of Cox's Orange Pippin or Ribston Pippin. Of Lady Sudeley I grow a quantity, and on reference to my books I note that the bulk was sold during the last week in August and first two weeks in September. This in south Hampshire, within ten miles of the sea—hence my reason for not classing it with Irish Peach, Beauty of Bath, and Langley Pippin as an early variety. Langley Pippin certainly is finding favour, and is much more to be desired than Irish Peach, which is a poor thing. Mr. Weston says he considers Worcester Pearmain entirely out of season when Rival and Charles Ross are fit to eat. Surely Mr. Weston would retain Worcester Pearmain for exhibition and fruit-room display. I saw many bright-looking dishes of this Apple at the R.H.S. display on December 1, and many more at the Cattle Show, Smithfield, on December 9. In conclusion, let me examine some of the late kitchen varieties named by Mr. Weston, and see if they are required, even for show, in the fruit-room, or elsewhere. Northern Greening, Norfolk Beefing, Royal Late Cooking, and Mère de Ménage. Can one of these be compared with Newton Wonder in quality or even in appearance? If not, why include them? Mr. Weston is singularly reticent on the subject of the newer varieties, some of which are infinitely preferable to many of those he has named. *E. Molyneux.*

Iris stylosa.—The first flowers of I. stylosa opened on December 7, and, after the hot, dry season, it was decided to try to make some use at this season are extremely beautiful and useful, and make a charming touch of colour in the outdoor garden, as well as being most useful as cut flowers. These are very effective when associated with Roman Hyacinths or Narcissus, and can be grown anywhere and in any odd corner, more particularly where they catch the sunshine. When thoroughly established they flower persistently every season. They can be grown in heavy or light soil or between stones or rocks when sufficient depth of soil is provided for them. *W. A. Cook, Ockford House Gardens, Surrey.*

Preserve from Fruit of Pyrus (Cydonia).—A large plant of Pyrus (Cydonia) japonica having borne a good crop of fruit here this season, it was decided to try to make some use of the fruits, partly because of their delicious fragrance, also from the fact that, like all others of the same family, they had grown to a much larger size than usual this season. As the fruits are very firm and do not get soft even when they turn yellow, they appeared best adapted for jelly, and were treated in the same way as the ordinary Quince, viz., placed in a jar covered with cold water and put in a side oven that was cooling down at night. They remained there for some time after the oven was heated in the morning, until they were quite soft. The juice was then strained off, and 20 ozs. of sugar added to each pint of the juice. It was then put to the fire, boiled thoroughly for twenty minutes, and poured off into jars. It set into a nice firm jelly of a rich orange colour, with a fine aroma, similar to the scent of the fruit before cooking, and a nice brisk flavour; in short one of the most delicious jellies I have ever tasted. *W. H. Divers, V.M.H., Belvoir Castle Gardens, Grantham.*

War and Its Effect on Horticulture.—Much has been written since the outbreak of this unfortunate war on its effect on horticulture, and with much that has been stated I am entirely in agreement. To me it is appalling to see large tracts of land badly cultivated, and, indeed, in many cases practically not cultivated at all. How often one hears the remark that either the land is unfavourable or that it is not worth the expense of attempting to make it suitable. This, to my mind, is absurd, for I have yet to find the piece of land that is unsuitable for cultivation of some kind or another. To state a simple case out of many by way of illustration, we have to depend on Germany to a very large extent for our supply of Horseradish, and at the present moment there is a great scarcity of this vegetable owing to the supply being cut off. Yet there are many acres of land which are practically idle which is quite suitable for producing Horseradish at its best. Though much has been done to educate the English public in the proper methods of production, there is yet much to be done in this respect. It is well known that one man can and does produce double and treble the amount from a given area, as compared with his neighbour under precisely similar conditions, and this applies equally to the farmer, market gardener, and the nurseryman. My contention is that every foot of ground in this island should be made to produce something or another to its fullest extent, and if this were done we should then be in a much better condition, both in times of peace and war. Forestry should play a much more important part in this country than it does. Take our hedge-row trees for example; in many cases worthless specimens exist which might and ought to be occupied with good paying timber; very little attempt is even made at pruning the trees when young, and even when it is practised the work is in a most crude fashion. Fruit-growing also should engage the attention of our legislators. Better methods of cultivation should be adopted, and a much more careful selection of varieties insisted on, and those only grown which are suited to particular districts. Much has been written on, but I fear very little notice taken of, the neglected orchards in most parts of the country. We see large plots of land occupied with worn-out trees and, in many cases, worthless varieties; especially does this apply to Apples, Pears and Plums. We have much to learn from foreign countries, not only in the production and cultivation of nearly everything in relation to agriculture and horticulture, but also in grading and packing produce for market. Small-holdings were suggested as a stimulus to cultivation, but unfortunately the great majority of those which have come under my notice have proved to be dismal failures, and the same applies to allotments. Nevertheless, I know that some adopt proper methods and get excellent returns, but more care should be exercised in accepting the right class of applicants, and means should be adopted whereby better instruction is given in this direction. *Edwin Beckett, Aldenham House Gardens, Elstree.*

Florists' v. Garden Dahlias.—I was much interested in reading the article on the Duffryn Dahlia trials which appeared in the *Gardeners' Chronicle* of December 12, p. 379, and my regret at being unable to attend at the time of inspection was revived. That Mr. Cory deserves credit for his valuable stimulus to Dahlia culture is undoubted, and it is to be hoped that in the near future his enthusiastic labours will bear fruit. My attention was particularly drawn to the reference to the production of Cactus Dahlias subsequent to the advent of Juarezii, and I felt in perfect agreement with the views expressed by R. H. P. When, previous to 1900, I was an active member of the Committee of the National Dahlia Society, I got introduced into the prize list a rule that in the case of seedling Dahlias for certificate no wiring should be permitted, and that, I think, 9 inches at least of stem should be shown with the flower. By this means I had hoped to eliminate varieties which had soft, drooping stems, and to encourage raisers in the production of true-formed, Cactus flowers borne on upright stalks. My return to Scotland, strange to say, coincided with the removal of the regulation from the National Dahlia Society's prize list, but I venture to suggest that had it remained and had its strictures been given effect to, many Dahlias since certificated and introduced into commerce would never have been heard of, while erect flowering varieties with long stems and well-shaped blooms would have been, at least, encouraged. During the currency of the regulations above referred to many sarcastic comments were levelled at me, because certain seedlings put up for awards hung helplessly over the sides of the vases in which they were shown, but this was the very reason for such a rule being put into force, for had the rule been observed many of them would never have been there at all. When, on one occasion, I took to the Crystal Palace one of the finest and longest-stemmed Dahlias raised to that date—a giant amongst its fellows on the table—it was passed over as being too large and too strong-stemmed, and yet for many years this same variety has been extremely valuable to exhibitions all over the country, and has been year by year the most wanted Dahlia in the whole of a large collection grown under my supervision. I quite understand that there are two classes of purchasers, one for exhibition, and the other for garden decorative purposes, and that there is no reconciling the one with the other. The competitor wants a good bloom under any conditions, the other a good flower with an erect habit. If raisers were encouraged to turn their attention to the latter problem there is not the slightest doubt but it would be solved to the satisfaction of everyone. With the advent of beautiful Cactus flowers with long stems, on plants of good habit, many of the present so-called decorative or garden varieties would disappear and a new era of popularity would dawn on the Dahlia. Raisers, I am certain, may be depended upon to rise to the occasion if the Royal Horticultural and National Dahlia Societies will only lead the way. Although I have purposely dealt with the Cactus section for reasons which will be quite evident, I am not oblivious to the fact that in other classes of Dahlias we have already many varieties of highly decorative value, but the types would be still further improved upon by the society adopting the foregoing suggestion as to the making of awards. *Robert Fife, Edinburgh.*

SOCIETIES.

ROYAL HORTICULTURAL.

December 15.—The final meeting for 1914 was held on Tuesday last in the Vincent Square Hall, Westminster. The exhibition was the smallest for the year.

The Floral Committee recommended three Awards of Merit to new plants, and awarded nine Medals to groups.

The Orchid Committee recommended one Award of Merit and one Cultural Commendation. Three Silver Flora and one Silver Banksian Medals were awarded for groups in this section.

The Fruit and Vegetable Committee recommended an Award of Merit to the well-known Apple Winter Ribston; there were no groups of either fruits or vegetables.

Floral Committee.

Present: H. B. May, Esq. (in the chair), Messrs. G. Reuthe, John Dickson, W. P. Thomson, J. T. Bennett-Poë, C. Dixon, Geo. Paul, Wm. Howe, J. F. McLeod, J. W. Moorman, John Jennings, Thos. Stevenson, R. Hooper Pearson, C. R. Fielder, W. J. Bean, John Green, R. C. Notcutt, B. Crisp, E. Bowles, F. W. Harvey, Jas. Hudson, and E. H. Jenkins.

AWARDS.

Awards of Merit.

Celastrus articulatus (see *Gard. Chron.*, December 5, 1914, p. 368).—Long sprays of this beautiful, deciduous climber were exhibited from the Royal Botanic Gardens, Kew, bearing a profusion of scarlet-coated seeds set in three-valved capsules.

Chrysanthemum Richmond.—A late market or decorative variety of canary-yellow colour. (See p. 391.) Shown by Mr. T. Stevenson.

Poinsettia pulcherrima rosea.—A pale rose-coloured variety of this well-known winter stove plant. (See coloured Supplementary Illustration, September 12, 1914.)

Cultural Commendation.

This award was made for flowering shoots of Luculia gratissima (see *Gardeners' Chronicle*, January 30, 1897, p. 81, fig. 22). Shown by Mr. H. J. Elwes, Colesborne. The trusses of pink tubular flowers were unusually good.

GENERAL EXHIBITS.

Messrs. H. B. May and Sons, Upper Edmonton, exhibited a floor group of Poinsettias, interspersed with Begonias, Ericas, Primulas and Ferns. The Poinsettias were arranged in three bold groups, of which the centre one was wholly of the new rose-coloured variety, which formed the subject of the Supplementary Illustration in the issue for September 12 last. (Silver Flora Medal.)

Messrs. Stuart Low and Co., Enfield, showed miscellaneous greenhouse flowers. A bank of Cyclamens was very showy, the beautiful Salmon King variety appearing conspicuously. Begonias were well shown, and they included a number of delightful little plants in thumb pots. (Silver Banksian Medal.)

Messrs. J. Piper and Son, Bayswater, showed a large group of Azaleas and Ericas, interspersed with Codiaeums (Crotons), Ferns and Palms. This exhibit was the largest in the Hall, and appeared as a big bank of flowers, the Azaleas Deutsche Perle (white) and Mme. Petrick (pink) being a mass of blossoms, specimens in tiny pots being as floriferous as the larger plants. (Silver Flora Medal.)

Mr. L. R. Russell, Richmond, exhibited a raised, circular group of Begonias of the Gloire de Lorraine type, and a fine collection of berried and ornamental-leaved shrubs. The centrepiece in the shrubs was a plant of Arbutus Unedo, some 10 feet high, with a profusion of the scarlet fruits. The new Cotoneaster angustifolia, with orange berries, Pernettyas in variety, fruiting Aucubas, and Skimmia japonica, a mass of red berries, were other good things in this imposing exhibit. (Silver Flora Medal.)

Messrs. W. Wells and Co., Ltd., Merstham, were awarded a Bronze Flora Medal for an exhibit of Carnations and Chrysanthemums. They had fine blooms of the large white Japanese Chrysanthemum Queen Mary; a large yellow Japanese variety named James Fraser, and a good late pink variety in Bertha Lachaux. The fine pink Antirrhinum Nelrose, which they have exhibited consistently well since the early summer, was included.

Messrs. W. Cutbush and Son, Highgate, showed indoor flowering plants in variety. The specimens of Erica gracilis were unusually good, and there were also bright Cyclamens, Begonias, Daphne indica rubra, and Lilium tigrinum. (Silver Banksian Medal.)

Messrs. Wills and Segar, Kensington, were awarded a Silver Flora Medal for finely flowered Azaleas, Begonias, and Ericas, relieved with Palms and Ferns.

Messrs. Allwood Bros., Wivelsfield, Haywards Heath, exhibited excellent blooms of Perpetual-flowering Carnations, of such beautiful varieties as Rosette, Gorgeous, Mrs. C. F. Raphael, Mary Allwood and Wivelsfield Wonder. (Silver Banksian Medal.)

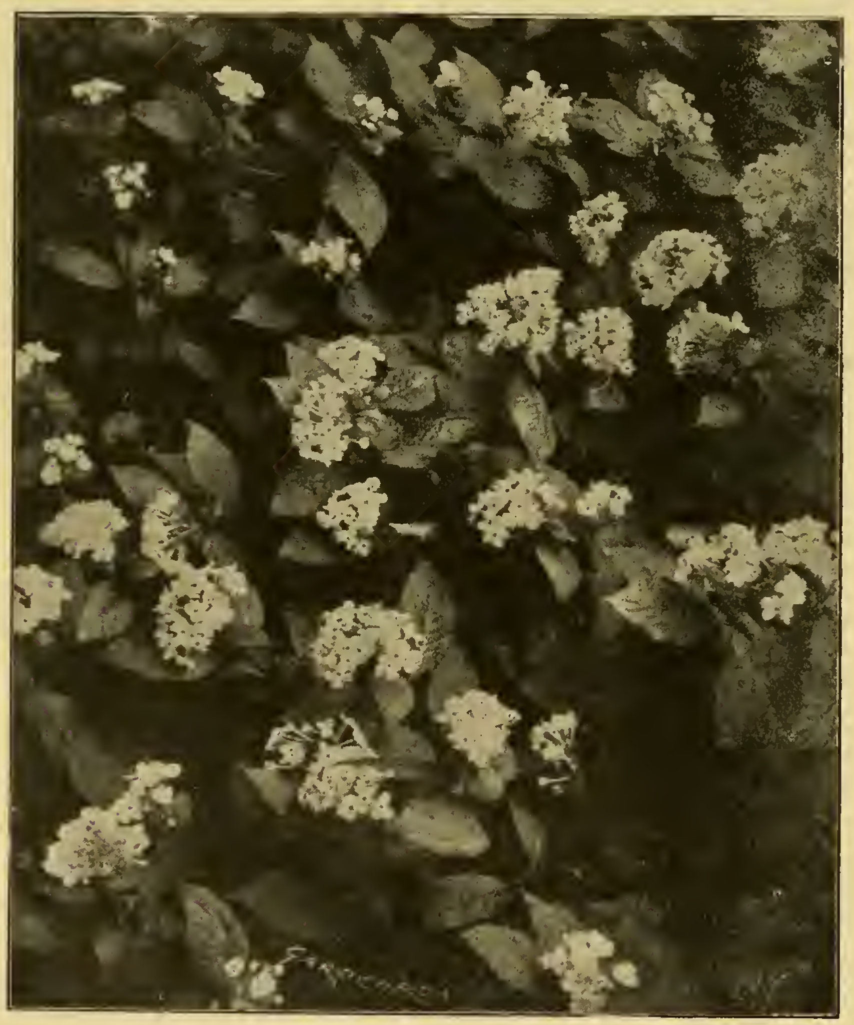


Fig. 151.—Luculia gratissima: a fragrant greenhouse plant, for which Mr. Elwes was awarded a cultural commendation at the R.H.S. meeting on Tuesday last.

Alpines were exhibited by Mr. C. Elliott, Stevenage, including Gentiana acaulis and Iris alata in bloom; Mr. G. Reuthe, Keston, Kent; and Misses Hopkins, Shepperton.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair, and Messrs. Jas. O'Brien (hon. secretary), Gurney Wilson, W. Bolton, R. A. Rolfe, J. W. Potter, F. J. Hanbury, A. McBean, W. Cobb, J. Charlesworth, J. Cypher, W. H. Hatcher, W. P. Bound, J. E. Shill, C. H. Curtis, A. Dye, W. H. White, S. W. Flory, S. Low and Sir Harry J. Veitch.

AWARDS.

Award of Merit.

Laelio-Cattleya Sir Douglas Haig (L.-C. Henry Greenwood × C. Octave Doin), from Messrs. Sander and Sons, St. Albans. A very beautiful hybrid, with the excellent features of C. Octave Doin (Mendelii × Dowiana aurea). The sepals and petals, which are broad and well displayed, are white, the showy lip veined with rose on the outside of the side lobes, the front being violet-purple, the disc yellow.

Cultural Commendation.

Mr. J. E. Shill (gr. to Baron Bruno Schröder) for a grand specimen of Odontoglossum crispum Leonard Perfect, with two spikes bearing fifteen and fourteen flowers.

GENERAL EXHIBITS.

Messrs. Charlesworth and Co., Haywards Heath, were awarded a Silver Flora Medal for a group of Calanthe Veitchii, Laelia Gouldiana and excellent Odontoglossums. Specially noteworthy were the new yellow Laelio-Cattleya Cornelia (L.-C. Golden Oriole × C. Empress Frederick); some good Miltonia Bleuana and M. St. Andre; Laelio-Cattleya Bella alba, with fine flowers; and the now rare Coelogyne Gardneriana, with a drooping raceme of white flowers.

Messrs. Sander and Sons, St. Albans, were awarded a Silver Flora Medal for a group at the back of which were a number of the purple winter-flowering Laelia Gouldiana, with a plant of Ansellia africana and a well-flowered Pleurothallis Roezlii. A good selection of Odontoglossums, and Laelio-Cattleyas with some interesting species, were also included.

Messrs. Jas. Cypher and Sons, Cheltenham, staged a group of remarkably well-grown Cypripediums, for which a Silver Flora Medal was awarded. It included Cypripedium Leeanum Clinkaberryanum and other varieties of C. Leeanum, good C. insigne Sanderae, the fine true C. Priam, varieties of C. Actaeus, C. Boltonii, and some unnamed hybrids, the best of which was a showy form raised between C. Beryl and C. Euryades, and distinctly one of the best of its class, and a selection of Masdevallias were also included.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group, in which the best plants were a fine form of Vanda Sanderiana, V. coerulea, two white forms of Cattleya labiata, a very finely-coloured form of C. Petersii, Brasso-Cattleya Queen Alexandra, and a large light form of Cypripedium Tracyanum raised between C. aureum virginale and C. Leeanum virginale.

J. Gurney Fowler, Esq., Brackenhurst, Pembury (gr. Mr. J. Davis), sent a very fine flower of a new seedling which was known to have L.-C. Dominiana Langleyensis on one side. It was suggested that the other parent was a dark C. Hardyana. Also a very handsome Odontoglossum seedling.

R. Windsor Rickards, Esq., Usk Priory, Monmouthshire, sent Odontoglossum Rickardsiae (Rossii × percultum), a very pretty flower, with the sepals and petals blush white spotted with red-brown, and large blush-white lip with yellow crest; and four good Cypripediums—viz., C. Susanne (glaucophyllum × Fairrieanum), C. Priory Beauty (aureum × Antinous), C. nitocynthia (nitens × Cynthia) and C. Keeleyi, said to be between C. gigas magnificum and C. Fairrieanum, but in which the influence of the latter parent could not be traced.

Pantia Ralli, Esq., Ashtead Park, Surrey, showed Odontioda Brunette (Oda. Bolmhoffiae × Odm. Harryanum), dark chocolate-purple in colour.

H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), sent the handsome Odontoglossum Lambeananum Goodson's var. and Sophro-Cattleya Annette (C. granulosa × S. grandiflora), a pretty rose-red flower with bright red lip with yellow base.

R. G. Thwaites, Esq., Chessington, Streatham, sent the new Cattleya Pretoria (Peetersii × Dowiana aurea), shaped like C. Dowiana, rose colour with a yellow shade. Lip purplish-crimson with gold veining. Also two C. Maggie Raphael alba, Sophro-Cattleya Ruby, Cattleya Dusseldorfei Undine and a pretty Brasso-Cattleya.

Walter Cobb, Esq., Normanhurst, Rusper (gr. Mr. C. J. Salter), showed Odontoglossum percultum Cobb's variety in good form.

Baron Bruno Schroder sent a fine specimen of Cypripedium Moonbeam, which had previously received a First-class Certificate.

Messrs. J. and A. McBean, Cooksbridge, showed a brightly-coloured form of their Sophro-Cattleya Pearl (S.-C. Doris × C. Portia).

A. J. W. Warren, Esq., The Cedars, Epsom (gr. Mr. Bridges), sent a seedling between Laelia pumila praestans and C. Dowiana aurea—a form of Laelio-Cattleya Clive.

Messrs. Flory and Black, Orchid Nursery, Slough, showed a nice form of Laelio-Cattleya Bola, with white sepals and petals and dark purple lip; L.-C. Barbarossa; Stanhopea Wardii oculata; a good white Odontoglossum crispum and the very rare Cirrhopetalum brunescens, a dwarf, purple-tinted plant with a compact umbel of purplish flowers very regularly arranged.

William Bolton, Esq., Wilderspool, Warrington, showed flowers of seedlings from the fine white C. Boltonii, but which although crossed still retained the clear white ground colour.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq. (in the chair), Messrs. J. Cheal, W. J. Jefferies, W. Bates, Edwin Beckett, A. R. Allan, H. Markham, H. J. Wright, E. A. Bunyard, A. Bullock, Owen Thomas, John Harrison, W. Poupart, J. Willard, James Gibson, Geo. Kelf and P. D. Tucker.

The Committee found practically nothing for their deliberations, a striking contrast to the last meeting. Mr. W. Palmer, Andover, exhibited his new Apple, Lord Kitchener, and a yellow conical variety named Joffre-French. The following Award was made :—

AWARD OF MERIT.

Apple Winter Ribston.—This variety is more generally known as D'Arcy Spice, and sometimes as Baddow Pippin. Its other synonyms are Essex Spice and Spring Ribston. Hogg describes it as a medium-sized fruit, roundish or oblate, with prominent ribs, which terminate in four and sometimes five ridges at the crown. The flesh is greenish-white, firm, crisp, juicy and sugary, with a rich vinous flavour. It is a first-rate dessert Apple, keeping till April or May.

NATIONAL ROSE.

December 10.—The thirty-eighth annual general meeting of the National Rose Society was held on the 10th inst. in the Connaught Rooms, Great Queen Street, London. The president, Mr. Chas. E. Shea, occupied the chair, and about eighty of the members were present. The first business after the reading of the minutes was the appointing of two scrutineers of the ballot (Messrs. Courtney Page and C. C. Williams).

The annual report of the Council was read by the hon. sec., Mr. Edward Mawley, of which the following are extracts :—

EXTRACTS FROM THE REPORT.

The Council, in submitting their report for the past year, are pleased to be able to state that, notwithstanding the present disastrous war, the society still continues to make steady progress. Indeed, but for the war this would have been the most prosperous year it has yet known; whether regarded from a financial point of view or as to the increase in its membership.

Shows.—The spring show was held on April 23, and proved a great success, the number and quality of the exhibits being much in advance of those at the society's first spring show in the previous year. There was also a very much larger attendance of members and their friends.

The Metropolitan Exhibition was held on July 7, by the kind permission of the President and Council of the Royal Botanic Society, in the beautiful gardens in Regent's Park. This also was a successful exhibition, and the blooms, favoured by the cool weather, retained their freshness throughout the day. It was, however, not nearly so extensive as usual; indeed, not more than about half the size of the record exhibition of the previous year. The principal part of the show was held in one large tent. Her Majesty Queen Alexandra, the society's Royal Patroness, once more honoured the society by paying a visit to the exhibition, a compliment keenly appreciated by the members.

The provincial show was held, at the invitation of the Mayor and Corporation of Bath, in the Sydney Gardens of that city on July 16. This was a much smaller provincial show than usual, which was no doubt in a great measure owing to the forwardness of the season and the southern position of the show. In fact, we have to go back to 1889 in order to find a provincial show as limited in extent. The thanks of the society are due to Mr. W. F. Cooling, and also to Mr. W. Jeffery and his staff, for carrying out so well the arrangements made for the exhibition.

Owing to the war no autumn exhibition was held this year.

The Council regret that they were unable to carry out the promise made in their last report, which was that a new edition of the *Enemies of the Rose* and also of the *Handbook on Pruning Roses* should be sent to the members during the year. They hope, however, to be able to do so in 1915.

Affiliated Societies.—The number of societies in affiliation with the National Rose Society is now fifty-five, or the same number as in the previous year.

Rose Conference at the White City.—A most successful and instructive conference was held by the society at the White City, Shepherd's Bush, W., on June 23, on the "Progress and Development of the Rose during the Hundred Years of Peace and Progress," when several interesting papers were read.

New Challenge Trophy.—A new nurserymen's champion challenge trophy has been obtained to supply the place of the old challenge trophy, which was considered unsuitable.

The Late Mr. George Gordon, V.M.H.—The Council record with regret the death in June last of Mr. George Gordon, V.M.H. Mr. Gordon joined the society in 1893, and was at once elected a vice-president. His long experience in connection with the management of other leading horticultural societies proved of considerable service to the Council. He was appointed hon. secretary of the society's Rose conference at the White City, but did not live to see the result of his labours at the conference itself.

The Late Mr. George Dickson, Sen., V.M.H.—It will be remembered that Mr George Dickson was in 1912 awarded the society's Dean Hole Memorial Medal for the services he had rendered to Rose culture during the past half-century, and as one of the most successful pioneers in the scientific hybridisation of Roses.

Rules for Judging New Roses.—Early in the year new rules were drawn up for the guidance of those appointed to judge new seedling Roses and distinct sports at the society's exhibitions, with a view to increasing the value of their awards.

Finance.—The receipts for the past year, including a balance from the previous year of £474 15s. 11d., amounted to £4,217 6s. 7d., and the expenditure to £3,512 8s. 4d., leaving a balance at the bankers of £704 18s. 3d.

In September last a donation of fifty guineas was contributed by the society to the Relief Fund of the society's Royal patroness, H.M. Queen Alexandra.

Membership.—During the past year 695 new members have joined the society. Allowing for the losses by death and resignation the total number of members is now 6,257. Taking the year as a whole two new members a day have been added to the list of membership. Since the war began in August nearly 100 new members have joined the society.

Increase in Membership since 1908.

	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Number of members	3,150	3,797	4,584	5,125	5,504	6,035	6,257
Net increase since previous year	666	647	787	541	379	531	222

Shows in 1915.—The Spring Show will take place in the Royal Horticultural Hall, Vincent Square, Westminster, on Friday, April 16. The Metropolitan Exhibition will be held in the Royal Botanic Gardens, Regent's Park, on Tuesday, June 29. The Autumn Exhibition will be held in the Royal Horticultural Hall, Vincent Square, Westminster, on Thursday, September 16. N.B.—Provincial Exhibition.—The Council have as yet been unable to arrange for a provincial show in 1915.

Publications in 1915.—The *Rose Annual for* 1915, which will contain a verbatim report of the conference held at the White City, Shepherd's Bush, W., in June last on "The Progress and Development of the Rose during the Hundred Years of Peace and Progress," in addition to the usual number of articles, will be issued to the members in the spring. It will also contain a symposium on the question of manuring Roses.

Retirement of the Hon. Secretary.—The Council record with regret that, owing to the ever-increasing burden occasioned by the vigorous growth and expansion of the society in recent years, Mr. Edward Mawley has, after thirty-seven years of invaluable services to the society, found it incumbent upon him to retire from the position of honorary secretary, which he has filled with such exceptional ability and devotion. During this long period of unsparing labour and effort in the society's interests Mr. Mawley has earned the lasting gratitude of the members and the warm appreciation and affection of those with whom he has been associated.

The Council rejoice in the knowledge that Mr. Mawley will continue to take an active participation in the affairs of the society as its president.

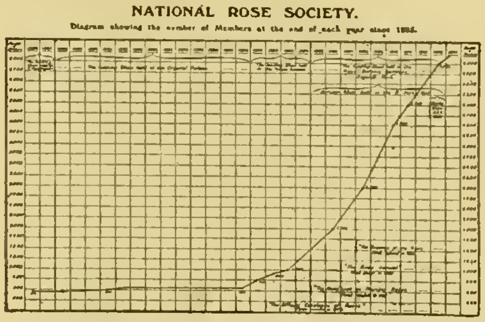


Fig. 152.—National Rose Society's diagram showing the rate of increase in membership.

The hon. treasurer, Mr. George W. Cook, referred to certain items in the balance-sheet. The society ended the year with a balance in hand of £704 18s. 3d. Last year they were able to place the sum of £500 to reserve, and although they had not added to the reserve fund this year it amounted to about £3,000. The sum of £3,045 2s. 1d. had been received in subscriptions, the amount constituting a record. Since the war began they had enrolled 100 new members. The effect of the war on the membership could not be correctly estimated. No fewer than 4,700 members had paid their subscriptions before the outbreak of hostilities, and it behoved the society to take a cautious and prudent course until the war was ended. Thanks to a substantial reserve fund they were in a position to withstand adverse circumstance for some years to come. The receipts from advertisements in the society's publications were above the average, and the income from invested funds was £72 5s. 3d.

The president, in moving the adoption of the financial statement, stated that it breathed no spirit of despondency. The fine balance of more than £700 would help them to support a period of stress. Everything considered, the balance-sheet was much better than could have been anticipated. The war has undoubtedly had its effects on the society, but the members must not be unduly depressed, for he was confident that after peace was declared they would enjoy even greater prosperity than before, and professional Rosarians would undoubtedly benefit by the increased amount of business that would arise. Touching on the retirement of the hon. secretary, Mr. Shea stated that the Council had decided to appoint two joint secretaries and a secretarial committee. Some were inclined to grumble because the autumn show had been abandoned, but it was inevitable, seeing that the military authorities had commandeered the R.H.S. Hall. The abandonment of the show had, moreover, resulted in a saving of expense to the society, and they had been able to forward the sum of fifty guineas to Queen Alexandra, to be allotted by her to one of the numerous relief funds. He concluded by expressing the opinion that, barring the struggle necessitated by the war, the future of the society seemed a bright one.

Mr. George Paul, in seconding the adoption of the report, referred with regret to the retirement of the hon. secretary. He was sorry that circumstances had compelled the abandonment of the autumn show, for traders always considered that it gave a fillip to business; but the trade had every reason to be thankful for the help their patrons had given them, and no doubt in this respect the influence of the Society had had an effect.

The Rev. J. H. Pemberton referred to the society's publications, and criticised some points in the recent issue of *Hints on Planting Roses.* He deprecated the use of the term "Austrian Briar" for the new race raised by M. Pernet-Ducher, and considered that the Frenchman should be honoured by retaining the name "Pernettiana," by which they were well known. They were derivatives not of any Austrian Briar, but of Rosa lutea. Mr. G. Birch, Peterborough, suggested holding the spring show on two days, but it was pointed out that this was contrary to rules.

Alterations of Rules.—Several alterations in the rules necessitated by the changes in the secretarial office were submitted to the meeting. These were as follows :—

PROPOSED ALTERATIONS IN RULES AND BY-LAWS.

Rules 2, 6, 9, 11, 13, 16, 18, and 20.—Insert the words "Honorary Secretary or Honorary Secretaries" instead of "Secretary" or "Hon. Secretary."

Rules 9, 11, 16 & 18.—Insert the words "The Deputy President" after the word "President" in Rules 9, 16 and 18, and before the words "Hon. Secretary" in Rule 11.

Rule 9.—After "Acting Vice-Presidents for the time being" add "not to exceed twelve in number."

Rule 12.—In line 1 delete "12."

Rule 15.—In line 8 after the word "vote" delete the word "and" and substitute the words "Each Member."

Rule 16.—After the words "Standing Committees" insert in line 5 "(a) A Secretarial Committee not exceeding five elected Members who shall control and direct the Secretarial work of the Society. The Chairmen of the Standing Committees shall be ex-officio Members of this Committee." In line 13 delete the word "seven" and substitute "ten." In line 20 after the word "Society" add "and such Committee shall appoint one of its number as Editor of the Society's publications." In line 24 after the word "Each" insert "Standing," and delete the words "have power to" and substitute "elect its own Chairman and"

> Note.—No Member of the Council shall be entitled to serve on more than one of the three following Committees :—The Finance Committee, the Exhibitions Committee and the Publications Committee.

Rule 18.—In line 3 after the word "Council" insert "or in any Standing Committee."

By-law 1.—Delete the words in brackets.

After some discussion these were all adopted. The alteration in by-law 1 was for the purpose of giving the Council a free hand to fix the date of the next exhibition. Mr. F. Dennison regretted that it was suggested to alter the by-law, for if the show was held before July the northern growers were handicapped. Formerly July 7 was the date on which the greatest number of Roses would be out in gardens, but now perhaps July 4 could be considered the best date.

Mr. George Paul considered that the alteration was necessary, for the H.P.s and Teas had been to a great extent supplanted by the newer H.T.s. After further discussion the alteration to the by-law was carried.

The chairman next referred to the retirement of the hon. secretary, which was a severe loss to the society. Mr. Mawley had given most valuable services and the accumulated experience of thirty-seven years to the society. He hoped that a more substantial recognition of their secretary's labours would be made in the coming year, and moved a special vote of thanks to Mr. Mawley. The treasurer, Mr. G. W. Cook, seconded. He was glad that they were not losing him altogether, and that they would still have the advantage of his ripe experience in his new office as president. It was decided that an honorarium of £150 be given to Mr. Mawley as a slight mark of gratitude and esteem. In his reply to the chairman's motion of thanks Mr. Mawley said that it was very encouraging to him to find that his services had been appreciated by the society he had loved and worked for for so long. He wished, however, to remind them that he himself owed a debt of gratitude to the society for having provided him with a pleasant occupation. The love of the Rose was inherent in most English people, and it was to this fact that the society owed much of its success. Referring to the reasons for his retirement, he said that he thought it would be in the interests both of the show and of himself. For years he had had no real leisure, and he felt that he was in need of it. He concluded by wishing his successors in office as pleasant a time as he himself had enjoyed when discharging the secretarial duties.

The result of the election of officers and council was next declared. The Rev. H. S. Arkwright and Messrs. A. R. Bide, F. W. Harvey, B. Peyman, and A. E. Protheroe are new members of the Council, and the office of secretary, left open by the appointment of Mr. Mawley as president, has been filled by the election of two secretaries, who will act together—Messrs. H. R. Darlington and Courtney Page.

The Rev. J. H. Pemberton then moved, in a short speech, a vote of thanks to the chairman. Mr. C. E. Shea, especially referring to the services he had rendered to the society as its president. This was seconded by Mr. W. F. Cooling and passed with acclamation; and the Council presented to Mr. Shea the Dean Hole Memorial Medal as an expression of the gratitude of the members and Council of the society. In his reply Mr. Shea expressed his appreciation of the society's action, and said that pleased as he was to have the medal he was even more grateful for the kindness and sympathy which prompted the conferring of the distinction.

The Conversazione.

After the meeting a conversazione was held, to which members and their friends were admitted.

Mr. E. J. Holland gave an address illustrated by lantern slides produced by colour photography and collected by Mr. H. L. Wettern. Mr. Mawley, the newly-elected president of the society, commented on the advance that had taken place in recent years in colour photography, and said it was only lately that the society had interested itself in this work, the first colour photograph obtained by the society appearing in their annual for 1912.

In the course of his remarks Mr. Holland pointed out some of the defects of the system, which was far from being accurate. The photographs of red and crimson Roses, in particular, failed to give an accurate rendering of the tint of the petals or the depth of colour in the flower. Again, the green of the foliage was usually either too blue or too brown. The colours most satisfactorily reproduced were yellow and orange. Another point referred to was that the autochrome plate was rather dense for the purpose of projection from the lantern. Mr. Holland employed a powerful light in his lantern, but more brilliant pictures were decidedly more pleasing than those of greater density.

Dr. Hamilton exhibited to the society a series of autochrome pictures of Roses and garden scenes, but he made use of a glass screen placed between the lantern and the audience, and projected his slides from the back, focussing the pictures on the screen. This is a special form of apparatus not generally available. The photographs exhibited by Mr. Holland were in part designed to illustrate the effects of pruning and pegging down Roses, which were shown both before and after these operations, and in various stages of growth. Some of the pictures consisted of views of Roses and Rose beds taken in Kew Gardens and in the gardens of Mr. Darlington and the Rev. F. Page Roberts. Illustrations were also given of various methods of staging Roses at exhibitions, chiefly taken from the City of London Show.

Altogether the slides shown were interesting and varied, and were much appreciated by the audience. Both before and after the lecture an appropriate selection of music and songs was performed.

NATIONAL CHRYSANTHEMUM.
ANNUAL CONFERENCE.

December 9.—In the absence of the President, Sir Albert Rollit, who was unwell, the annual Conference of this society was presided over by Mr. Bevan at Essex Hall, Strand.

The first paper was read by Mr. M. Mills, whose subject was "The Cultivation of Single-flowered Chrysanthemums." He prefaced his lecture by remarking that whilst for a considerable period the growing popularity of the Japanese type of Chrysanthemum ousted the singles from favour, there was now an increasingly large number of admirers for the single flowers, and he claimed that they were indispensable. This type was of simple cultivation, free-flowering and possessed good lasting qualities in a cut state. Mr. Mills described the cultivation of the plants from the taking of the cuttings to the cutting down of the old plants to furnish stools and cuttings for the next season, illustrating the various operations by the aid of good lantern slides. He insisted on the necessity for early stopping of the shoots in order to obtain sturdy, branched plants, and that the plants should be grown in as cool conditions as the weather permitted. In conclusion, Mr. Mills showed on the screen a selection of plants and flowers grown under his charge at Coombe Court.

Mr. Thos. Stevenson then dealt with "The Best Singles and Some Others," and also illustrated his lecture with many excellent lantern slides. At the outset Mr. Stevenson disarmed criticism by reminding his audience that any selection of best or worst varieties was of necessity a matter of personal taste and opinion, and that he did not expect others to agree with him. Single-flowered Chrysanthemums, he continued, may be conveniently divided into three classes: (1) The large-flowered exhibition varieties; (2) spray-flowered sorts which are eminently suitable for cutting purposes; (3) those best suited to be grown as pot plants; and he insisted that the first two must be considered distinct, as it was but rarely that a variety could be grown successfully for both purposes. As regards "quality" in a Chrysanthemum bloom, this somewhat elusive character was, he considered, largely due to the amount of substance in the ray florets, which assured lasting properties. In his opinion the flower with quite flat florets was nearly always of poor quality, and usually it would be found that it was those with fluted florets which were of the highest standard. To obtain this desired high quality good cultivation and the selection of the right bud were essential. Neglect of the latter point often resulted in the formation of too many florets. As a rule, he thought that very large singles were not desirable, if only because the side view of such blooms was not at all good, and besides this they generally travel badly. He laid down that simplicity and colouring were the best attributes of the single Chrysanthemum. He ventured to formulate the ideal exhibition flower as being from 4 inches to 6 inches across, with three or four rows of "petals," and the "eye" clearly seen, but not over large. (Later in the evening, in reply to a question, Mr. Stevenson supplemented the last by saying that he liked the eye to be one-fifth the size of the whole flower). The stems should be erect, but not unduly stiff, and the foliage not above medium size. Amongst the varieties mentioned as being of the best quality were Charles Kingsley, Joan Edwards, Manor House, Terra-cotta (especially recommended for conservatory decoration), Mary Anderson (of which a charming spray was shown), Eureka, Mensa, Mrs. Loo Thompson, Gloria, Buttercup, Portia, Miranda, Merstham Jewel, Molly Godfrey, Mary Riches, and Red Star.

Mr. Percy Cragg's paper was entitled "Hints on the Future Raising of Single Chrysanthemums." His remarks, he said, were addressed to amateur rather than to professional gardeners. He felt that there was a great future for this type, but at present there were rather serious limitations. As compared with the Japanese section, the season was too short. Ignoring, for the moment, the border varieties, the season of the singles was approximately from mid-October to mid-December. He felt that the best way to lengthen the season would be to work in the border varieties and the earliest of the pot plants to lengthen the beginning of the season. There is, he said, at present a weakness in the spray type of single Chrysanthemum. They are good as pot plants, but when cut, the petals soon flag. Very few sorts are equally good for sprays and for exhibition purposes. His aim, when raising new varieties, was to first get the desired type, then select for colour and form, but the results always show a very mixed race, and it was like groping in the dark. Inasmuch as the new type which he considered might be obtained would be of little commercial value, it was rather the work of the interested amateur than that of the trade grower to experiment in that direction. The anemone-centred flower, of which Snow Queen is an almost ideal bloom, would become popular. The variety Kathleen May had a good centre, but the outer florets were irregular. Some seedlings which he has raised at Heston approach the Collerette Dahlia in style and others seem to imitate the Stellate Cineraria, and he felt that these could well be developed. Perfume in the flowers and foliage was also desirable. For pot plants, Mr. Cragg was of the opinion that the ideal was dwarf plants from 2 feet to 2 feet 6 inches in height, and bearing about thirty flowers. With regard to the pollination of the flowers, Mr. Cragg gave an admirable exposition of the process. His method was to cut the flowers to be worked upon with quite long stems, and place them in water in a sunny room, where they can be easily looked after. If the water is changed frequently and the stems wiped dry before being replaced good seed will ripen freely on most sorts. When ripe, the seed-heads are placed in seed-pockets duly labelled. The best time for sowing is early February, and if placed in a temperature of 50° Fahr. the seed will germinate in three to six days, and in three or four weeks the seedlings should have two complete leaves. If grown in ordinary conditions, these seedlings flower the same year.

The Discussion.

Mr. C. H. Curtis had hoped the lecturers would discuss the relative size of the disc of the flowers; in many cases he thought it was too large. The shape of the disc was also important when formulating the ideal bloom. With the general disappearance of the old variety Progne from gardens, the Violet perfume, which had many admirers, seemed to have also disappeared, but it was to be hoped that in the near future we should have a race of Chrysanthemums possessing in an increased degree the Violet perfume. Mr. Curtis spoke of the difficulty of explaining verbally the most simple operations and congratulated Mr. Cragg on the lucidity of his explanation of pollination.

Mr. C. Harman Payne also spoke of the Violet scent which was present in Progne, and said that it was the topic of several years ago, when a class for Chrysanthemum blooms possessing perfume was open for competition at a provincial show. An exhibitor electrified some of the judges by staging a goodly assortment of flowers possessing perfume, but an investigation showed that the scent was due to a chemical addition.

In reply to questions on various matters of cultivation, Mr. Mills contended that the term "Anemone," as applied to the new type of single Chrysanthemum, was a misnomer, and that "Scabious-flowered" would be more appropriate.

Mr. Cragg, replying to Mr. Curtis, said that the seed matured in four to six weeks. He had no knowledge of its period of vitality, because he always sowed very soon after the seed became ripe.

A meeting of the Executive Committee was held on the 14th inst., Mr. T. Bevan presiding.

The financial statement was submitted and approved. In spite of the adverse circumstances, it is gratifying to know that all liabilities will be discharged up to the end of the year, and leave a small balance in hand without drawing from the reserve fund.

It was resolved that the year's accounts should be made up to December 31 as usual, and be printed with the annual report for circulation at the annual meeting, which will be held at Carr's Restaurant, Strand, on February 1, 1915.

The Crystal Palace being in the hands of the Naval Authorities, no decision regarding the shows for 1915 was arrived at, but it is intended to hold shows either there or elsewhere if at all practicable.

The dates of the meetings of the Executive Committee were fixed as follows:—September 20, October 18, November 15, and December 13, 1915, and January 17, 1916. The Floral Committee will hold its meetings on September 20, October 4, 18, and 25, November 3, 15, 29, and December 8, 1915.

The annual dinner of the Floral Committee will be held at the Old Burton Tavern, Cheapside, on January 13 next.

THE WOMEN'S AGRICULTURAL AND HORTICULTURAL INTERNATIONAL UNION.

December 3.—The fifteenth annual meeting, which was held at the new Bedford College for Women, Regent's Park, under the presidency of Miss Tuke, principal of the college, on this date, was well attended. The annual report recorded 68 new members since the previous annual meeting, and there are now 346 subscribing members. H.R.H. Princess Louise, Duchess of Argyll, is the president of the union, whose members are principally farmers, smallholders, gardeners, and teachers. The hon. secretary, Mrs. T. Chamberlain, said that, in addition to the normal inquiries for skilled women gardeners, the Union has filled vacancies in private gardens, caused by the ready response of the men to the call for active service. These were, of course, temporary posts, but there were indications of an increased demand, and it is most essential that only thoroughly capable members are recommended for employment.

Professor Fraser Story then gave a lecture on "Forestry: Continental Methods, and the Need to Copy Them." He said that few countries possessed such beautiful specimen trees or such fine collections as this country, but we are behind our neighbours as regards forestry proper. He illustrated examples of the gnarled twisted trees, which are often seen in our woods, and compared them with views taken in Continental forests, such as the Pine woods of France, Switzerland, and Germany, which have great commercial value. The Oak forests of Hungary were also illustrated, and he drew particular attention to the undergrowth of Beech and Birch, which yielded a revenue whilst the Oaks were maturing, and also fed the soil with their fallen leaves. In conclusion, Professor Story said that if every stick of timber fit for use in England had to be cut it would only yield a ten months' supply.

ROYAL SCOTTISH ARBORICULTURAL.

AFFORESTING SAND DUNES.

The members of the Aberdeen branch of this society met recently in the University Buildings, Aberdeen, when there was a good attendance, presided over by Mr. Sydney J. Gammell, of Drumtochty. The usual routine business included a reiteration of the demand for the institution of bursaries and extension lectures in connection with forestry in the shires of Aberdeen, Banff and Kincardine. The chief item on the agenda, however, was a lecture by Mr. Peter Leslie, B.Sc., lecturer in forestry at Aberdeen University, on "Planting of the Sand Dunes at Culbin." Mr. Leslie stated that one of the most striking illustrations that they possessed in this country of lands otherwise useless being reclaimed and made of economic value by means of afforestation was afforded by the experiments which had been carried out during the last 100 years on the large stretches of sand known as the Maviston and the Culbin Sands, situated on the Morayshire and Nairnshire coasts between the rivers Nairn and Findhorn. In both localities the sands could be separated into three zones. The large sand hills on the north, often over 100 feet in height, were nearest the coast. Inland they were succeeded by medium-sized dunes, which again merged into a flat area of sand 2 to 3 feet deep. The flat sand usually covered a moss formation, which in the case of Maviston was a continuation of the bog of Loch Loy, further to the west. At Maviston, on the Brodie estate, the flat areas were well wooded. They contained trees of various ages, which for the most part had been reproduced by natural regeneration. There was no sharp or well-defined boundary between that low-lying and comparatively level area and the hummocky dunes into which it gradually merged. In parts the latter also were well wooded, but those nearest to the large sand hills were as yet covered only with a few rabbit-pruned trees which were struggling to make headway in spite of the adverse conditions with which they had to contend.

The large sandhills, of which there were several at Maviston, flanked those dunes to the north and west. Two of them were of special interest on account of the manner in which they had destroyed or were continuing to destroy the plantations lying in their path. They had no bent growing on their surfaces, and were both making comparatively rapid progress. On the Brodie estate the whole area under Scots Pine on the bog land and the flat of sand, as well as on the spaces between the sand hills, amounted to 220 acres.

A Buried Estate.

Although the Maviston sands had a grandeur of their own, they were comparatively insignificant when contrasted with the main body of sand at Culbin, three miles further eastward. The Culbin Sands proper covered an area four miles long by two miles broad. In the valleys the old land surface often came to view. The furrows made by the plough 200 years ago were still visible. The place was a happy hunting ground for antiquarian treasures. The old bed of the Findhorn, which watered the alluvial meadows that at one time formed the most fertile agricultural land of Moray, could still be traced. The history of the estate was associated with that of the family of Kinnaird. About the middle of the twelfth century Freskin, a rich Flemish merchant, who gave the King financial assistance, acquired large tracts of land in the north of Scotland. He died in 1171, leaving the whole of Sutherlandshire to his son Hugh, who was the first authentic ancestor of the Earls of Sutherland. His second son, William, acquired the estates of Duffus, in Morayshire. From him the Dukes of Atholl were descended. Another family, the De Moravians, were settled at Culbin at the same time that William was settled at Duffus. In 1400 Thomas Kinnaird married the heiress of the De Moravians. The estate was settled on their second son, whose descendants retained possession until their heritage was ruined by a sudden incursion of sand from the west in the autumn of 1694. The largest part of the lands of Culbin are now included in the estate of Moy. To the east of Moy lies the estate of Binsness, and to the south the small property of Kincorth. Between Brodie and Moy are situated the low woods of the estate of Dalvey. Kincorth, Dalvey and Moy all present features of considerable interest to the forester, but in recent years the experiments at Binsness have been attracting much attention. The larger part of the woods of Binsness had been planted on the medium-sized dunes, the species chiefly employed being Scots Pine. A small area was planted with a mixture of Scots and Corsican Pines in 1903. The Corsican had completely surpassed the Scots in height and growth. The success seemed to be due to its adaptability for growing on sand and its power of resisting wind. Planting operations were also extended to the large sandhills on the north. As they were, to begin with, quite bare of covering, it was specially necessary to see that they were properly fixed before carrying out any planting. The sands were fixed with Marram Grass. In the area where the planting was to take place Spruce branches were laid down with their ends inserted in the sand on the windward side. The cost of planting was not high—30s. per acre, exclusive of fencing. The Binsness plantation would undoubtedly in years to come form a splendid monument to the care which the Chadwick family had bestowed on their formation.

Mr. Leslie, in conclusion, mentioned that two years ago the Balgownie golf links—the river Don separates this area from the northern boundaries of the city of Aberdeen—were threatened by sand blowing through the gulleys and clefts which formed breaks in the embankment that ran along the sea coast. On his predecessor's advice gratings were placed across those entrances so that they might be filled up and make the outer dune continuous. As an extra precaution the sloping sand on the seaward side of the embankment was planted with Marram Grass and Elymus arenarius. At first it was feared that the sea would wash out these grasses, but instead of this happening the grasses had driven back the sea, and the sand which they were collecting seemed to be forming a new embankment or dune some 15 yards in advance of the old one. Since the grasses were planted the Don had changed its channel, retreating from the Balgownie side towards the south; but it might be too far-fetched to attribute that adventurous departure from traditional habits on the part of the venerable and ancient river to the influence of those interesting but simple experiments.

THE WEATHER.

THE WEATHER IN WEST HERTS.

Week ending December 16.

A Remarkably Wet Week.—Another unseasonably warm week, and the third in succession. During the past week there were only two warm days, all the other days being of about average temperature. With one exception, however, the nights were all unusually warm for the time of year, and on the one cold night the exposed thermometer registered only 9° of frost. The ground is at the present time 1° warmer than is seasonable, both at 1 foot and 2 feet deep. Rain fell on six days, and to the total depth of 2¾ inches, bringing up the aggregate fall for the past fortnight to over 4 inches, and making this the heaviest rainfall recorded here in any previous fortnight since December, 1911, or for three years, when it was slightly exceeded. During the fortnight in question 19 gallons of rainwater came through the bare soil percolation gauge, and 15½ gallons through that on which short grass is growing. Both gauges are a yard square and 2½ feet deep. On the night of the 9th inst. 1½ inch of rain fell, which is an exceptionally heavy quantity for any single day or night. The sun shone on an average for only 21 minutes a day, which is 49 minutes a day short of the mean duration for the middle of December. Calms and light airs as a rule prevailed. There was a seasonable amount of moisture in the air at three o'clock in the afternoon. *E. M., Berkhamsted, December 16, 1914.*

THE WEATHER IN SCOTLAND.

The weather during November has been variable, mild with rain at the beginning, cold, with occasional night-frosts from the 14th to the 26th, and wet and stormy at the end of the month. The total rainfall was 3.82 inches, with the greatest fall of 0.62 inch on the 8th, the number of rainy days being 20. The total amount of sunshine was 63.9 hours, distributed over nineteen days, the two brightest days being the 12th and 17th, with seven hours of sunshine each. The barometric pressure for the month varied from 30.53 inches on the 18th to 29 inches on the 30th, the mean for the month being 29.75 inches. The mean maximum temperature was 45.97°, with the highest maximum of 53° on the 9th and the lowest maximum of 38° on the 15th and 17th. The mean minimum temperature was 36.53°, the highest and lowest minima being 51° and 29° on the 9th and 18th respectively. These figures give a mean temperature for the month of 41.25°, with an absolute range of 24° and a mean range of 9.44°. On the grass the thermometer varied from 50° to 22.5°, with a mean of 33°. The relative humidity of the air was 88°, while the soil temperature at a depth of 18 inches fell from 47° to 40°.—*James Malloch, St. Andrews Training College, Kirkton of Mains, near Dundee.*

GARDENING APPOINTMENTS.

Mr. George Mollison, formerly Gardener to P. J. Home Rigg, Esq., Tarvit, Cupar, Fife, as Gardener to the Right Hon. the Earl of Northesk, Ethie Castle, Forfar. [Thanks for 1s. for R.G.O.F. box.—Eds.]

W. H. Woodsford, for the past three years Gardener at Clapton Court, Crewkerne, Somerset, and previously Foreman at Forde Abbey, as Gardener to H. Runge, Esq., Chilworthy House, Chard, Somersetshire.

W. Morgan, for the last five and a half years Gardener at Blackwell Court, Bromsgrove, as Gardener and Bailiff to the Princess Alice Orphanage, New Ascot, Birmingham.

Mr. H. Smith, for 8 years Foreman at Moor Hall, Cookham, as Gardener to B. H. Mardon, Esq., Haileywood, Shiplake, Henley-on-Thames.

Mr. Alexander McLean, formerly Gardener to L. A. Johnson, Esq., Laragh House, Bandon, County Cork, as Gardener to C. A. Law, Esq., New Park, Blackrock, County Dublin.

Mr. John Morrison, for the past 5 years Gardener to Mrs. Arthur Cayzer, at Heaselands, Haywards Heath, Sussex, as Gardener to Miss M. H. Knobel Harman, Grayswood Place, Haslemere, Surrey. [Thanks for 1s. 6d. for R.G.O.F. box.—Eds.]

Mr. A. J. Jones, for the past 7 years Gardener to J. Fisher, Esq., J.P., Higham Barsenthwaite Lake, Cockermouth, Cumberland, as Gardener-Manager to W. H. A. Deterding, Esq., Kelling Hall, Holt, Norfolk.

Mr. E. Young, formerly Gardener at Bentley Priory, Stanmore, as Gardener and Bailiff to Francis R. Pryor, Esq., Woodfield, Hatfield, Hertfordshire.

MARKETS.

COVENT GARDEN, December 16.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz.	3 6- 5 0
Azalea, white, per doz. bunches	4 0- 4 6
Bouvardia, white, per doz. bun.	5 0- 6 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties	1 6- 2 0
— smaller, per doz. bunches	12 0-15 0
— Carola (crimson), extra large	2 6- 3 0
— Malmaison, per doz. blooms	
— — pink	12 0-15 0
Christmas roses, per doz.	1 9- 2 0
Chrysanthemum, specimen blooms, white, per doz.	2 0- 3 0
— yellow per doz.	2 0- 2 6
— pink ,,	1 9- 2 0
— bronze ,,	1 9- 2 0
— white, medium per doz.	1 6- 1 9
— coloured, per doz.	1 3- 1 9
— Spray, white, per doz. bun.	5 0- 8 0
— — yellow, per doz. bun.	5 0- 7 0
— — pink, per doz. bun.	5 0- 8 0
— — bronze, per doz. bun.	5 0- 8 0
Daffodils, single, per doz. bun.	18 0-21 0
Eucharis, per doz.	2 6- 3 0
Gardenias, per box of 15 and 18 blooms	4 0- 5 0
Hyacinths, Roman, 12's, per doz. bunches	10 0-12 0
Lapageria alba, per doz. blooms	— —
Lilac, white, per doz. sprays	4 0- 5 0
— mauve	5 0- 6 0
Lilium auratum, per bunch	2 6- 3 0

	s.d. s.d.
Lilium longiflorum, per doz., long	2 6- 3 0
— — short	2 9- 3 0
— lancifolium album, long	2 0- 3 0
— — — short	1 6- 2 6
— — rubrum, per doz., long	1 6- 2 0
— — — short	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special	15 0 —
— special	10 0-12 0
— ordinary	8 0- 9 0
Marguerites, per doz. bunches	2 0- 2 6
Narcissus, Soliel d'or, per doz. bun.	4 6- 5 0
Orchids, per doz.:	
— Cattleya	9 0-10 0
— Cypripedium	1 6- 2 0
— Odontoglossum crispum	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	9 0-10 0
— White, per doz. bunches	10 0-12 0
Poinsettias, per doz. blooms	9 0-12 0
Roses: per dozen blooms, Bride	2 0- 3 0
— Kaiserin Augusta Victoria	1 6- 3 0
— Lady Hillingdon	1 3- 1 6
— Liberty	2 6- 5 0
— Madame A. Chatenay	1 6- 4 0
— Melody	2 0- 3 0
— My Maryland	1 6- 2 6
— Niphetos	1 3- 1 6
— Prince de Bulgarie	2 6- 3 6
— Richmond	2 6- 4 0
— Sunburst	2 0- 3 0
— White Crawford	2 0- 3 0
Spiraea, white, per doz. bunches	8 0-10 0
Tuberoses, on stems, per doz.	0 9 —
— short, per doz.	0 5- 0 6
Violets, English, per doz. bunches	2 0- 2 6
— Princess of Wales, doz. bun.	3 6- 5 0
White Heather, per doz. bunches	4 0- 6 0

French Flowers.

	s.d. s.d.
Anemones, pink, per doz. bun.	1 9- 2 0
Mimosa, per bunch	0 10- 1 0
Narcissus, Paper White, per doz. bunches	1 6- 2 0
— Soleil d'Or	2 6- 3 0

	s.d. s.d.
Violets, single, per doz. bunches	2 0- 2 6
— Parma, per large bunch	2 6- 3 0
Ranunculus, scarlet and orange	— —

REMARKS.—Although the wet weather has not favoured the cut flower business, a great improvement is already noticed, and the prospects appear bright for a good Christmas trade. Large quantities of flowers are being dispatched this week to the provinces. At present there does not appear to be any shortage in supplies, but prices this morning were, for most subjects, a trifle firmer; Liliums and Roses showed the greatest advance. Roman Hyacinths are more plentiful and the quality much better. A few bunches of Single Daffodils, Scarlet and White Tulips were on sale to-day. Poinsettias are selling better: it is expected that there will be large quantities of these flowers available next week for Christmas decorations. Supplies of Chrysanthemums appear to be sufficient for the demand, but their prices are advancing. The supplies of Holly and Mistleto appear to be limited, and prices are at present very high. There is an abundance of all other Evergreens. French flowers are more plentiful than last week, but the consignments arrive very irregularly. Narcissus Paper White appears to withstand the long journey best. Several pads of Violets are to hand, but very few of the flowers are in a saleable condition; and this is true of Pink Anemones, Ranunculus, and Mimosa, but large bunches of Parma Violets are not affected so much. Dutch Lilac is arriving in a fair condition. Yellow Narcissus from Scilly reaches the market in an excellent condition.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa, per dozen	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri	6 0- 8 0
Aspidistra, per doz. green	18 0-30 0
— variegated	30 0-60 0
Azaleas, white and coloured, per dozen	36 0-42 0
Begonia Gloire de Lorraine, 48's, per dozen	10 0-12 0

	s. d. s. d.
Cacti, various, per tray of 15's	4 0 —
tray of 12's	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz.	18 0-30 0
— — 60's, per doz.	8 0-12 0
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen	10 0-12 0
Erica, gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 9 0

Plants in Pots, &c.: Average Wholesale Prices.—*Cont.*

	s. d. s. d.
Erica hyemalis, 48's, per doz.	8 0-10 0
— — alba	10 0-12 0
— nivalis, 48's, per dozen	9 0-10 0
— — thumbs, per doz.	3 0- 5 0
Ferns, in thumbs, per 100	8 0-12 0
— in small and large 60's	12 0-20 0
— in 48's, per dozen	5 0- 6 0
— choicer sorts, per dozen	8 0-12 0
— in 32's, per doz.	10 0-18 0
Geonoma gracilis, 60's, per dozen	6 0- 8 0
— larger, each	2 6- 7 6
Hyacinths, Roman, in flower, per dozen	2 0- 2 3

	s. d. s. d.
Kentia Belmoreana, per dozen	5 0- 8 0
— Forsteriana, 60's, per dozen	4 0- 8 0
— — larger, per doz.	18 0-36 0
Latania borbonica, per dozen	12 0-30 0
Lilium lancifolium album, per doz.	— —
— — rubrum, per dozen	— —
— longiflorum, per dozen	18 0-30 0
Lily-of-the-Valley, 48's, per dozen	— 24 0-30 0
Marguerites, in 48's, per doz., white	9 0-10 0
Phoenix rupicola, each	2 6-21 0
Poinsettias, 48's, per doz.	9 0-10 0
Tulips, in flower, per dozen	1 0- 1 3

REMARKS.—This department is busy, both with foliage and flowering plants. Tulips and Roman Hyacinths in flower are soon all purchased, and Daffodils will be obtainable this week-end.

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples—	
— English, cooking, per bus.	4 0- 6 0
— — dessert, per ½ bushel	3 0- 6 0
— Nova Scotia, per brl.	15 0-24 0
— United States, per barrel	14 0-21 0
— Californian, per box	7 0- 7 6
— Oregon, per box	9 0-11 0
Bananas, bunch:	
— Medium	6 0 —
— X-medium	7 0 —
— Extra	8 0 —
— Double X	9 0 —
— Giant	10 0-12 0
— Red, per ton	£20 —
— Jamaica, p. ton	£12 —
Cobnuts, per lb.	0 5- 0 5½
Cranberries, per case	6 6-11 6
Grapes: Alicante, per lb.	0 8- 2 0
— Almeria, per barrel of 3 doz. lbs.	14 6-21 0

	s. d. s. d.
Grapes: *Continued*—	
— English, Gros Colmar, per lb.	0 8- 1 9
— Muscat of Alexandria	2 6- 4 0
— Canon Hall, per lb.	2 0- 5 0
Lychees, per dz. lbs.	18 0-20 0
Mandarins, per case	3 0-16 0
Nuts, Almonds, per bag	60 0-65 0
— Brazils, pr. cwt.	44 0-56 0
— Chestnuts, per bag	14 0-24 0
— Coconuts, per 100	16 0-20 0
— Walnuts, dried, per cwt.	36 0-68 0
Oranges, per case	5 6-22 0
Pears, American, per barrel	18 0-22 0
— Californian, per case	12 6-15 0
— stewing, per bushel	6 0- 7 0

REMARKS.—There are fair supplies of home-grown Apples, and large quantities from Nova Scotia in barrels of 3 bushels. The market is also well supplied with Californian and Oregon Apples, many of the fruits being highly coloured. The consignments of Pears from America, packed in barrels, are sufficient for the demand, and there are cases of Pears from Oregon and California, consisting of the varieties Winter Nelis and Easter Beurré. There is no apparent shortage in the supply of Denia and Valencia Oranges, but Jamaica and Jaffa Oranges will be scarce this season. Of Black Grapes there is a good supply, but Muscat varieties are, as usual in December, a limited quantity. Nuts of all varieties, with the exception of Naples Chestnuts, are plentiful. The number of Pineapples has decreased considerably during the past week. *E. H. R., Covent Garden, December 16.*

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Asparagus (Paris Green), per bun.	3 6- 3 9
Beans, French, per lb.	1 4- 1 9
Beetroot, per bushel	2 6- 3 0
Brussels Sprouts, per ½ bus.	1 0- 1 3
Cabbages, per tally	6 0- 8 0
Carrots, per cwt.	2 6- 3 0
Cauliflowers, per tally	9 0-12 0
Celeriac, per doz.	1 6- 2 0
Celery, per doz. bun.	7 0- 9 0
Chicory, Belgian, per lb.	0 6 —
Cucumbers, per doz.	8 0-12 0
Eschallots, per ½ sieve	2 0- 2 6
Garlic, per lb.	0 6- 0 7
Globe artichokes, per doz.	2 6- 4 0
Herbs, per doz. bunches	2 0- 6 0
Horseradish, English, per bundle	2 6- 3 0

	s.d. s.d.
Leeks, per dozen	1 6- 2 0
Lettuce, Cabbage and Cos, per doz.	2 6- 7 0
Mushrooms, cultivated, per lb.	0 10- 1 0
— Buttons	0 10- 1 0
Mustard and Cress, per dozen punnets	0 10- 1 0
Onions, per cwt.	10 0-12 0
Parsnips, per cwt.	3 0- 4 0
Peas, per lb.	1 0 —
Potatos, new, per lb.	0 8 —
Seakale, per doz. punnets	14 0-16 0
Spinach, per bus.	3 6- 4 0
Tomatos, English, per doz. lbs.	5 0- 6 0
— seconds	2 0- 4 0
— Teneriffe, per bundle	14 0-22 0
Turnip, English, per cwt.	2 6- 3 0
Turnip tops, p. bag	1 6- 2 0
Watercress, p. doz.	0 6- 0 8

REMARKS.—Home-grown Tomatos are finishing, and there is only a limited supply of these fruits from Teneriffe. Cucumbers are scarce and expensive. A few baskets of Madeira Beans reached the market this week. Channel Islands produce, including Beans, Potatos, and Peas show a slight increase in quantity. Trade is fairly steady in all departments. *E. H. R., Covent Garden, December 16.*

Potatos.

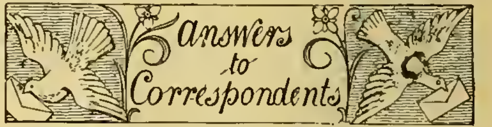
	s. d. s. d.
Dunbars — Up-to-date	5 0- 5 3
Langworthy	5 3- 5 6
Kent	4 0- 4 3

	s. d. s. d.
Lincolns—	
Up-to-date	4 0- 4 3
King Edward	4 0- 4 3
British Queen	4 0- 4 3
Evergood	3 6- 3 9
Blackland	3 6- 3 9

REMARKS.—Trade is very fair, with a good demand and supply. Prices remain about the same as last week. *Edward J. Newborn, Covent Garden and St. Pancras, December 15.*

Obituary.

JOHN J. WALAND.—We regret to record the death of Mr. John J. Waland, park-keeper, Dumfries, after a short illness. Mr. Waland had charge of the Dock and Greensands Parks of the Town Council of Dumfries, and was in the employ of the Corporation in this capacity for a long period.



Answers to Correspondents

BLACK ALICANTE GRAPES: *W. M.* From the very meagre specimens sent, some of which were decayed, it is difficult to express an opinion as to the flavour. We are rather doubtful as to whether the variety is Black Alicante.

MEALY BUG ON VINES: *J. E., Hanwell.* For your house containing about 1,260 cubic feet you may, while the vine is dormant, use 2½ oz. sodium cyanide, 5 ozs. sulphuric acid, and 10 ozs. water. First place the water in a basin, and then add the sulphuric acid. It is a good plan to have a vessel to contain the sodium so made that when it is placed above the basin it can, by means of a string carried through to the outside of the house, be emptied into the basin. Do this in the evening, and do not enter the house in the morning till after the door has been open for half an hour. Repeat the operation in a week's time. The cyanide and sulphuric acid can be obtained at any chemist's shop. Mildew, when dormant, is not easily killed, but if you paint the rods during winter with 2 ozs. soft soap to a quart of water, adding sufficient flowers of sulphur to make a thick paint, and allow it to remain on through the spring, the mildew will be prevented from growing.

MOSS ON LAWNS.—*J. H. T.*: First give the lawn a raking with an iron rake to remove as much of the moss as possible. Let this be done thoroughly, working across as well as up and down the lawn. After sweeping the turf thoroughly apply green vitriol (ferrous sulphate) at the rate of 1½ cwt. to 2 cwt. per acre, and, if necessary, repeat the application.

NAMES OF FRUIT: *Dr. D.* With the exception of shape, we cannot detect any pronounced difference in the fruits received. Fruits of Doyenné du Comice vary in shape very considerably; the stock, soil and double grafting all having different effects.—*D. W.* 1, Charles Ernest; 2, Autumn Nelis.—*W. D. and Sons.* Cornish Gilliflower.—*A. B.* 1, New Rock Pippin; 2, Annie Elizabeth.—*T. W. G.* Much resembles Doyenné du Comice.—*J. B. W.* 1, Egremont Russet; 2, Golden Spire.

NAMES OF PLANTS: *Nurseryman.* 1. Ilex Hendersonii; 2, I. balearica; 3, I. Hodginsii; 4, I. Aquifolium var. argentea marginata elegantissima; 5, I. A. (adult condition); 6, I. A. var. argentea marginata; 7, I. A. var. aurea marginata; 8, Elaeagnus pungens var. Simonii aureo-variegata; 9, E. p. aurea marginata; 10, Veronica, apparently pinguifolia; 11, Taxus baccata fastigiata.

PEACHES: *H. W.* The best varieties to add to those already grown would be Peregrine and Dymond. The succession would then be as follows:—Hale's Early, Peregrine, Dymond, Alexandra Noblesse, Royal George, Barrington. If a later variety is required Sea Eagle might be added. Crimson Galande and Royal George would furnish fruits at the same time.

Communications Received.—J. G. D.—E. A.—H. J. B.—G. F.—J. B. R.—A. T. (Versailles)—E. S.—A. G.—C. F. L.—G. B. and Co., Ltd.—C. R. B.—G. F. M.—D. K.—F. M. B.—W. E.—C. B. J.—W. H. J.—T. W. B.—J. O.—R. E. E.—P. R. P.—J. R. J.—G. H. O.—J. W. X.—L. B.—F. G.—W. B.—C. G.—E. M.—W. D. W.—R. C.—F. G. T.—P. H. R.—E. Y.—A. J. J.—J. M. [thanks for 1s. 6d. for R.G.O.F. box.—EDS.]—A. McL.—H. S.—Fairholme.

THE
Gardeners' Chronicle
No. 1,461.—SATURDAY, DECEMBER 26, 1914.

CONTENTS.

American Gooseberry Mildew, spray for .. 413
Anemone coronaria and its varieties 413
Apples, a selection of .. 415
Conifers, notes on—
Cupressus Macnabiana 411
Cotoneaster bacillaris and C. salicifolia var. rugosa 413
Edinburgh fruit and vegetable market .. 413
Events of the year .. 412
Flowers in season .. 413
Flowers, preserving cut 413
Fruits, the history of cultivated 409
Ice fringes 413
Nomenclature and anger 415
Obituary—
Latham, William Bradbury 418
Peas, late 415
Plants, new or noteworthy—
Notes on the Genus Kniphofia 409
Potatos, two good new 413
"Pour nos amis français et belges" 414
Primula kewensis .. 415
Societies—
Royal Horticultural (Scientific Committee) 417
Tree growth on Clare Island 413
War items 413
Week's work, the 415-417
Yew, properties of .. 415

ILLUSTRATIONS.

Cotoneaster bacillaris and C. salicifolia var. rugosa. (Coloured plate.)
Cupressus Macnabiana 411
Downing, Andrew Jackson, portrait of 409
Kniphofia comosa, 410; K. erecta 410
Latham, William Bradbury, portrait of the late 418

THE HISTORY OF CULTIVATED FRUITS

AS TOLD IN THE LIVES OF GREAT POMOLOGISTS.

VI.—A. J. DOWNING.

POMOLOGICAL history in America is of comparatively recent date. The early settlers were occupied with matters of more importance. The land had to be won and defended from its previous occupants, and this struggle left little time for the cultivation of the refinements of civilisation. From the earliest days, however, attempts were made to grow fruits either of native origin or brought from home lands. The great difficulties of transport made the importation of trees impossible in many cases, and the only means was to take seeds of favourite fruits into the wilds and trust that among the seedlings some good varieties might be found.

It is probable that never before had so many seedling fruits been raised on so extended an area, and the results were of the greatest advantage to American pomology. The slow processes of selection sifted out this vast collection of fruits, and in due time "local" varieties acquired a wider fame, and, as means of communication developed, began to spread.

It is evident that the time was then ripe for a systematic pomologist who should describe and compare these new varieties, and it was not long before men were found capable of this great undertaking. It cannot be claimed for Downing that he was the first of these. Coxe, whose *View of the Cultivation of Fruit Trees* was published in 1817, was probably the earliest writer to describe fully the fruits of American origin. But Downing's work was drawn on a larger scale, and coming in the tide of the horticultural enthusiasm then rising in America, it won a success unequalled by any previous writers, and by few of his successors.

Andrew Jackson Downing was the son of a nurseryman who was settled near Newburgh, New York, on the banks of the Hudson. A few years of schooling, during which he did not distinguish himself for industry, were ended at the age of 16, and he returned to the family business, which, owing to his father's death, was under the control of his eldest brother. His love for Nature in all its aspects, and especially for botany and mineralogy, soon brought him into contact with cultured friends, and among them he found his true environment. His quick perception made the way easy to a knowledge of the small differences, so sensible to the trained eye, of the fruits cultivated in his nursery, and a good working library was collected which was of great value when he came to the production of his magnum opus, *The Fruits of America.*

At the age of 23 he married Caroline de Wint, a daughter of a wealthy neighbour, and it may be imagined that she brought with her a considerable "dot," for the Downing cottage was replaced by a house which possessed all the elegance which the refined taste of the day demanded. The grounds, too, were laid out in a corresponding style, and it is evident that landscape gardening was at this time attracting much of Downing's attention, as his first work, a treatise on this subject, was published in 1841. Most of his more remunerative work was done in this branch of his business, and the nursery generally was conducted in a manner which did not lead to profit. Indeed, it was said that every tree he sold for four shillings had cost him ten! Happily, a contract in connection with public gardens in Washington came in time to aid his somewhat disturbed finances, and his contributions to the gardening Press were at this time a further source of revenue.

ANDREW JACKSON DOWNING.

Downing's fame as a pomologist was established by the publication in 1845 of his *Fruits of America.* This work of some 600 pages deals with all the fruits of northern temperate climes, and contains full cultural directions and short descriptions of the fruits themselves. The descriptions are confined to the fruits, and only in a few cases are the growth and habits of the trees mentioned. Outline drawings of the principal sorts are given, and in some cases the synonyms are mentioned. Those of continental and English fruits are generally taken from Lindley's *Guide* or the catalogue which Thompson prepared for the Royal Horticultural Society.

Judged by the higher standards of descriptive pomology, Downing would not take a high place, but his work was sufficient for the time, and his trials of foreign fruits and his records of native ones make his book of very great value. Its success was remarkable, and new editions followed with astonishing rapidity. An edition was published in 1847, and contains some coloured plates of fair merit. By 1849 some nine editions had appeared, and in 1860 the work was revised by Charles Downing. This work still retains its popularity in the United States, and appendices have from time to time been published to bring it up to date.

Downing's activities were enormous; in all things pertaining to the country he took some part. His interest in the gardening paper, *The Horticulturist,* was unremitting, and many of his contributions have been gathered together in a work entitled *Rural Essays,* New York, 1853.

In the summer of 1850 he visited England and France to study the landscape gardening of the time, and took back with him a young English architect to help in this work, which became more important than the fruit tree business. His interest in fruits did not, however, abate, and he was one of the founders of the American Pomological Congress, and chairman of its fruit committee from the first.

In the prime of life, however, Downing's career was cut short. On July 27, 1852, he took steamer at Newburgh for New York in the ill-fated *Henry Clay.* Some 20 miles from the city the steamer took fire and most of the passengers, including Downing, lost their lives by fire or water.

He was last seen on the upper deck throwing chairs to the struggling passengers, and it was by this means that his wife was enabled to float to the shore.

This terrible calamity robbed American horticulture of a great personality, and of one whose work at an important period in its history had a great and stimulating effect upon its development. *E. A. Bunyard.*

NEW OR NOTEWORTHY PLANTS.

NOTES UPON THE GENUS KNIPHOFIA.

THE various species and hybrids of the beautiful genus Kniphofia are so extensively cultivated in the larger gardens and their beauty and decorative value are so well known and appreciated by the gardener, that it is quite unnecessary to say anything upon those points here. But with regard to their nomenclature in gardens there appears to me to be a great deal to be said, concerning which I propose to make a few observations. Before doing so, however, I should like to mention that I do not feel sure that the value of these plants to the beekeeper is as fully recognised as it should be. For I think there are few flowers that yield such an abundance of nectar as do those of Kniphofia; often it can be shaken from a spike of flowers in a perfect shower of drops. Kniphofias, especially the larger kinds, are therefore eagerly visited by bees; some of them may be seen crawling over the spikes busily collecting pollen and scarcely attempting to sample the nectar; others first sip of it at the mouth of a flower, and then gradually crawl inside until quite concealed within it. Often the flower seems to be rather a tight fit for the bee, but it usually backs out again quite safely. On some rare occasions, however, the poor bee fails to extricate itself, and perishes within the flower.

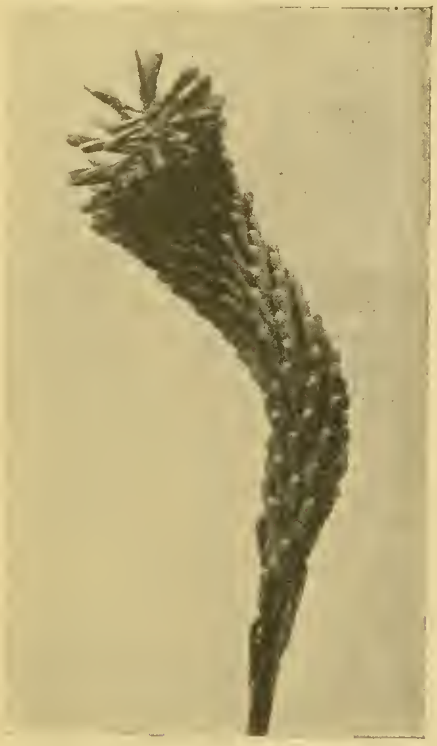


FIG. 153.—KNIPHOFIA ERECTA, A GARDEN HYBRID.

AS SEEN BEFORE ALL THE FLOWERS HAD ASSUMED THE ERECT POSITION.

From this fact it is evident that not only must cross-fertilisation be the ordinary method of seed production, but also that it lends itself to hybridisation to a very much greater extent than has probably been suspected. I am led to this belief because upon testing the names under which the various kinds are cultivated at Kew, I have been very much surprised to find that several have been received and grown under names that are by no means correct, and from enquiries made it would appear that this must be the case in other gardens. Further, I also feel sure that the industrious bee is chiefly responsible for this erroneous nomenclature, probably brought about in this way. Someone introduces a species new to cultivation; other horticulturists will, of course, desire to have it, so probably seeds of the plant are sown and the seedlings distributed under the name borne by the parent. But if it happens that another species of Kniphofia be cultivated in the same garden, then I believe the chance that the plants raised from such seeds would be hybrids is very great, and the more often a plant is reproduced from seed the more and more will it depart from the specific characters of the typical species. Indeed, from the investigations I have made, I am of opinion that in a very great majority of cases plants of this genus raised from seed produced in any garden where more than one kind is grown, whether that garden be in South Africa or Europe, will not be true to name, but will be more or less affected by hybridisation, unless precaution has been taken to fertilise the plant with pollen of the same species and to exclude all insect visitors.

Bearing upon this point, it would be interesting to know if these plants are fertile with pollen taken from (1) the same flower, (2) another flower or flowers on the same spike, (3) flowers upon a different spike produced from the same rootstock, or (4) only fertile with pollen taken from flowers produced by another plant. Careful experiments are needed to decide these points, but from the erratic way in which capsules are developed upon the spikes, it is probable that methods 3 or 4 will be found to be the prevailing ones.

The inference from all this is that if it be desired to obtain the typical form of any species, the only safe way would be by root division of the original plant, and that all plants raised from seeds produced under cultivation should be suspected of being hybrids. Therefore, as a considerable proportion of the Kniphofias under cultivation have in all probability been raised from seeds, they are mostly hybrid forms, although possibly raised from seed produced by the true plant. From the investigation made the foregoing seems to be the position as regards the plants and the names they bear. As some of the supposed species are certainly not true to name, the only remedy I can suggest would be to add the words "hybrid form" after the name.

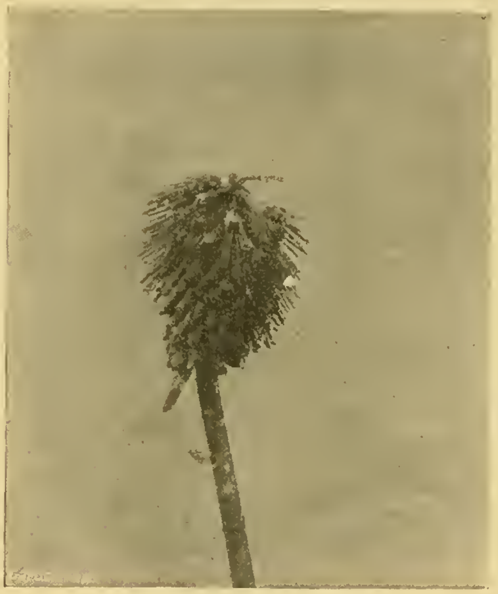


FIG. 154.—KNIPHOFIA COMOSA,

A TERMINAL SPIKE SHOWING THE FLOWERS OPENING SUCCESSIVELY DOWNWARDS, THE LOWER ONES BEING IN BUD.

Among those that I have examined are K. longicollis, K. Nelsonii, and K. breviflora. Probably the plants cultivated elsewhere under these names are the same as or similar to those grown at Kew. Yet none of these plants is identical with the typical forms of the species, and in the case of K. Nelsonii it is entirely different from the true plant. Two distinct forms are grown at Kew under the name of K. Nelsonii; one has yellow flowers and proves to be the hybrid raised many years ago by Mr. Dewar and described in the *Gardeners' Chronicle* in 1893, Vol. 14, p. 424, as a hybrid between K. pauciflora and K. Macowanii. As no name has been applied to this plant, it is proposed that it should be called K. kewensis. The other form has scarlet flowers, and although it may have descended from seed-raising from K. Nelsonii it is now entirely unlike that species, having leaves two to four times as broad, and strongly keeled on the back, whereas in the true K. Nelsonii they are rounded and three-nerved on the back.

K. Burchellii is a name that still exists in gardens, but I believe the original plant has long since died out, and the plants so named will not be that species.

The plant figured and described in the *Botanical Magazine* at tab. 7,293, under the name of K. modesta, by Mr. Baker, is a very unfortunate mistake. The true K. modesta, Baker, so far as known to me, is not and never has been in cultivation. It is one of the most remarkable species in the genus, and cannot well be mistaken for any other, on account of its flowers being all directed to one side of the spike, which is only 4 to 7 inches long and moderately dense. It is a native of East Griqualand, whilst the plant figured in the *Botanical Magazine* at tab. 7,293 is a native of Natal, whence a dried specimen and a living plant were sent under number 4,409 by Dr. J. M. Wood. It is a much stouter plant than K. modesta, with leaves 2 to 2½ feet long and a flower-stem 2½ to 3½ feet high, of which the spike is 9 to 18 inches long, with the flowers rather laxly scattered and directed to all sides: they are reddish or reddish-brown when in bud and white when expanded. As it has been already well figured and a description given, no further account of it is needed, but I propose to give this plant the name of K. sparsa, N.E.Br., as it is so very distinct from the true K. modesta.

Among the kinds in cultivation those grown under the names of K. erecta and K. comosa are two of the most interesting.

K. erecta is a garden hybrid of very marked peculiarity. When in young bud the flower-spike is conical, tapering upwards, and the buds spread out nearly horizontally. As the spike develops the flowers at first remain spreading until they attain their full size; then, beginning with the lowest, they assume an erect position, the axis of the spike at the same time elongating. From this cause the spike becomes somewhat club-shaped, as the upper flowers remain spreading for a time, and so give a greater diameter to

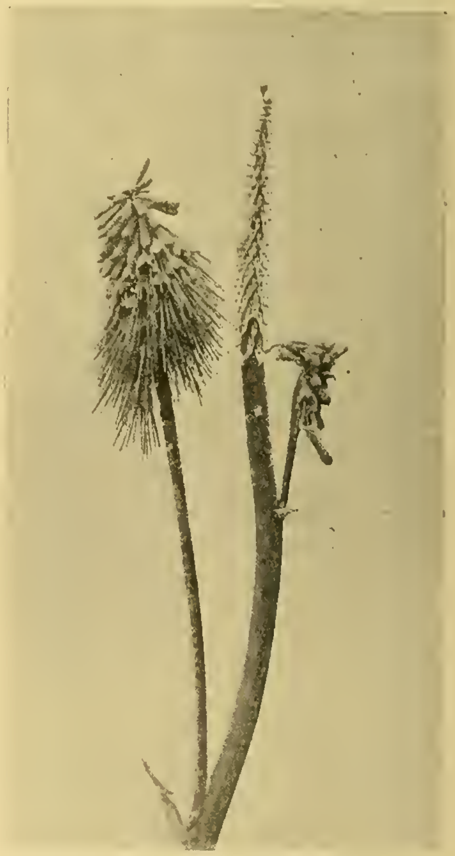


FIG. 155.—KNIPHOFIA COMOSA.

BRANCHED FLOWER-STEM FROM THE SAME PLANT AS FIG. 154, SHOWING LATERAL BRANCHES WITH THE FLOWERS OPENING SUCCESSIVELY UPWARDS, THE UPPER ONES BEING IN BUD.

that part, whence it tapers downwards as the flowers below become more and more erect and more closely pressed upon each other. Finally all the flowers become erect, and the spike is then cylindrical. Until the upper flowers begin to stand erect all, even the lowest of them, retain their brilliant orange-scarlet colour, but afterwards they fade, from below upwards. In retaining their colour for so long the flowers of this form differ from those of all others in cultivation. This retention of colour may be due to another peculiarity whereby this form differs from all others, for, besides assuming an erect position, the flowers never expand, but always remain in the bud state; so they do not get cross-fertilised and, so far as I have observed, no insects visit them. But I do not think that they are analogous to the cleistogamous flowers of other plants, as no capsules are produced and the anthers do not open, although they contain pollen which appears to be normal.

K. comosa of Kew is the same plant that Mr. Baker described in the *Gardeners' Chronicle* in 1884, Vol. XXII., p. 230, as K. Leichtlinii var. distachya, and suggested that it might perhaps be a hybrid between K. comosa and K. Leichtlinii. It is a very fine and handsome plant; usually the flower-stem bears only a single spike, but sometimes branches near the top and bears two or three spikes. The peculiarity of this plant (shared also by typical K. Leichtlinii, the true K. comosa and K. carinata) is that when the stem bears only one spike, instead of the lowest flowers of the spike opening first, as in the other kinds in cultivation, it is the uppermost flowers on the spike which mature and expand first, whilst the lower are in bud. But when the stem branches and bears one or two lateral spikes, the flowers of the terminal or main spike open as just described from above downwards, whilst on the lateral spikes the reverse is the case, the lowest flowers opening first, the progression of opening being upwards, as is normally the case in all the other kinds in cultivation.

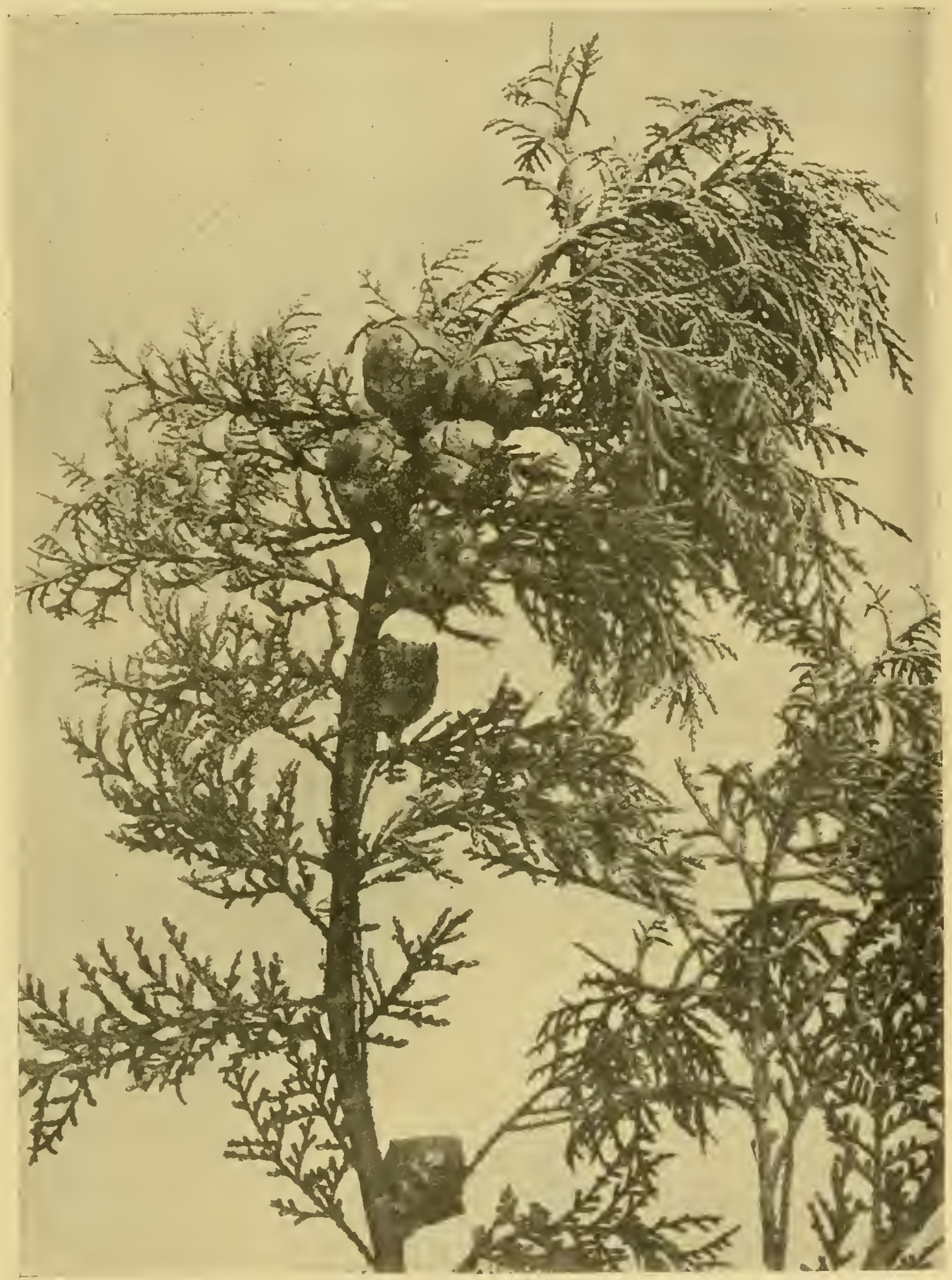
Although I am inclined to believe that K. Leichtlinii and K. comosa of gardens are merely forms of one species, I do not feel sure that either of them represents the true K. comosa, which, according to the dried specimens of the typical plant, has rather short, erect leaves, whilst those of the cultivated plant are two to three times as long as those of the typical plant and very spreading. Both are natives of Abyssinia, and, of course, it is possible that the much taller habit and longer and laxly-spreading leaves may be due to climatic conditions; but at the same time I have a suspicion that the K. comosa (or K. Leichtlinii) of gardens is distinct from although nearly allied to the true K. comosa. *N. E. Brown.*

NOTES ON CONIFERS.

III.—CUPRESSUS MACNABIANA.[*]

So rare has this much-neglected Conifer become in English gardens that only three or four examples are now known to exist in this country. It is a Californian species, discovered on the Sierra Nevada Mountains in 1853 by Jeffrey, who then believed it to be a Juniper. The next year it was found again by W. Murray, who described it, naming it Cupressus Macnabiana, after James McNab, who was for many years curator of the Royal Botanic Gardens at Edinburgh, and was one of the best gardeners of his time.

This Cypress may be distinguished from all the others, except Cupressus arizonica,[†] by the resin-exuding pits on the back of the minute scale-like leaves. When fresh, the foliage has a very refreshing odour. Miss Eastwood, of San Francisco, who has studied the tree in its native habitat, says its fragrance resembles Sandalwood, with a flavour of Pineapple. As a wild tree in California, it occurs in the hill country of eastern Napa Co., from Samuel's Springs to Pope Valley, and northward into Lake Co. to Red Mountain on the east side of Ukiah Valley in Mendocino County, but never becomes a large tree. Col. Purdy mentions[‡] a remarkable dwarf forest about half a mile square on the side of Red Mountain, composed almost entirely of this Cypress. The trees were from 12 to 20 feet high, with gnarled and twisted branches. They were covered with moss, and had the appearance of great age.



[Photograph by E. J. Wallis.

FIG. 156.—CUPRESSUS MACNABIANA.

Cupressus Macnabiana was first raised in England by Messrs. Veitch, who received seeds from their collector, Wm. Lobb, in 1854.

My first acquaintance with Cupressus Macnabiana as a living tree was at Brickendon Grange, Herts, in 1909, the residence of the late Mr. John Trotter, where I discovered a tree 25 feet high growing on the margin of a plantation, and coning freely. This is said to have been planted about 1860. The owner informed me that there were formerly two much larger specimens on the lawn, but these were damaged by wind and had to be removed some years ago. The Brickendon tree coned abundantly again this year, when Mrs. Trotter kindly sent me a branch, a portion of which is reproduced in Mr. Wallis' photograph, fig. 156.

The only other trees I know of are at Highnam Court, Gloucester, where there is a specimen about 30 feet high, with a forking stem, which is about 2 feet 8 inches in girth; a tree 15 feet high at Bicton; and another about half that size at Nymans, Handcross. There is also said to be a slender spreading tree in Kew Gardens about 20 feet in height, but this I have been unable to find.

Trees that formerly existed in the Botanic Gardens at Edinburgh and Glasnevin, and at Tortworth, are dead. It is evident that this is not a long-lived Cypress, which, together with the fact that it has been neglected for many years, accounts for its having almost dropped out of cultivation. *A. Bruce Jackson.*

---

[*] Cupressus Macnabiana, Murray in *Edin. New Phil. Journ.*, I., 293, t. 11 (1855); Lindley in *Gard. Chron.*) 420 (1855); Masters in *Gard. Chron.*, IX., 403, fig. 90 (1891), and in *Journ. Linn. Soc.* (Bot.), XXXI., 347 (1896); Sargent, *Silva N. Amer.*, X., 100, t. 528 (1896); Kent, *Veitch's Man. Conif.*, 213 (1900); Elwes and Henry, *Trees of Great Britain and Ireland*, V., 1174 (1910); Clinton-Baker, *Illus. Conif.*, III., 45 (1913).

[†] C. arizonica has these resinous pits, but the foliage is glaucous and the branchlets are quadrangular, not compressed, as in C. Macnabiana.

[‡] *Garden and Forest*, ix., 233 (1896).

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Average Mean Temperature for the ensuing week deduced from observations during the last Fifty Years at Greenwich, 38.3.

Actual Temperatures :—

London, *Monday, December* 21 (6 p.m.) : 40°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London : *Tuesday*, December 22 (10 a.m.) ; Bar. 29.2 ; Temp. 42°. Weather—Fine.

SALES FOR THE ENSUING WEEK.

WEDNESDAY—

Dutch Bulbs, Herbaceous Plants, etc., at 12. Roses at 1.30. At 67 and 68, Cheapside, E.C., by Protheroe and Morris.

Rose Trees, Perennials and Shrubs, at Stevens' Rooms, King Street, Covent Garden, at 12.30.

FRIDAY—

Herbaceous and Border Plants, Bulbs, etc., at 12. Roses at 1.30, by Protheroe and Morris.

1914.

The year 1914 ran more than half its course on lines of peaceful progress. Movements for the advancement of horticulture which had been gathering force for years culminated in achievement. The Royal Horticultural Society re-established Wisley as a research station, destined, as we hope, to become the leading institution of its kind in the world. The National Diploma held its first examination, attracting no fewer than sixty candidates, and thereby showing that young gardeners appreciate and mean to take advantage of this test of practical skill.

The Shows at Chelsea, Holland House, and elsewhere demonstrated the ever-increasing popularity of gardening and the high pitch of perfection which cultivation has reached in this country. At Duffryn Mr. Cory, by his great trial of Dahlias, showed how a flower may emerge triumphantly from a spell of adversity during which it had learned to mend its ways and take again a worthy place among the favourites of the garden. Conferences were held and international horticultural exhibitions were planned. To remind us of the imperfections of the world, the plants of our gardens and orchards continued to threaten trouble, although, thanks to the brilliant albeit droughty summer, vouchsafing us a wonderful harvest of fruit and flowers—a fruit harvest far and away above the average. In particular Gooseberry mildew and black scab of Potatos reminded us of the ills that flesh is heir to. Despite the prescriptions recommended for the former disease, the mildew went on spreading; but with respect to the latter the important discovery was established that certain varieties are naturally and completely immune from attack. This discovery, for which the Research stations and the Board of Agriculture deserve the greatest credit, has not yet met with the applause which it deserves, nor has the large scale application of the results of the discovery yet been put into practice. To do so will require resolute and far-sighted action on the part of the authorities, which action, if well-considered, will have the support of horticulturists. It should take the form of raising or securing sufficiently large stocks of the immune varieties to plant the whole of the area infected with black scab (wart disease). On behalf of horticulturists we invite the Board of Agriculture to call together a committee of experts to consider how this programme may best be carried out.

Nor was sorrow absent from the peaceful days of the earlier seasons. Death, even then, was busy, and claimed the doyen of horticulturists in the person of Sir Trevor Lawrence; Joseph Chamberlain, in whose brave heart was ever a soft spot for flowers : others who at this time or later in the year fell to death's incessant stroke are George Gordon, who was Editor of the *Gardeners' Magazine* for many years; H. Cannell, a veteran, who, by his industry and skill, introduced many novelties and rose to a high place among British nurserymen; J. Gould Veitch, H. J. Clayton, George Cuthbert, the distinguished veteran, M. C. Cooke, and William Latham.

Beyond the frontiers of civilisation, British explorers were risking their lives to enrich our gardens. Forrest's long journeying was reaching its end, and Farrer's, the first fruits of which have been described in these pages, was beginning.

Desirous of introducing yet more harmonious relations between the horticultural traders of Europe and of controlling more thoroughly the spread of plant pests, delegates from this country were sent to Rome, where they signed the Phytopathological Convention; which convention, described recently in these pages, now awaits ratification.

Science continued to throw gleams of light on the obscure places of horticulture. Soil sterilisation, advocated successfully by Dr. Russell, became more and more a routine practice in our nurseries. Bacterised peat, devised by Prof. Bottomley, showed itself to possess—at least, in certain circumstances—no inconsiderable manurial value, and experiments carried out in France by M. Truffaut and by Messrs. Sutton and Sons at Reading, mark distinct progress in our knowledge of the effects of radioactive soils on the growth of plants. Light was thrown by Mr. Kidd's investigations on the old and vexed problem of the cause of longevity of seeds : and these contributions to horticultural progress, as well as many others, were described week by week in our pages.

Thus we pursued the even tenor of our horticultural way; when in August, athwart the peaceful track of progress broke the tornado of war. The call to arms was answered by no class more readily than by gardeners and others of the profession of horticulture. We are proud to know this, and greet them as men who, though sometimes held to be slow of thought, proved themselves quick to know their country's need.

On the day of the outbreak of war the Royal Horticultural Society appealed to owners of gardens and vacant plots to plant without delay such crops as were likely to give a reasonable yield, and, thanks to this appeal, which was made simultaneously in these columns, much has been achieved in this direction. What may be done to augment our food supplies was indicated by exhibits from Wisley and from Messrs. Sutton and Sons at a recent fortnightly show of the R.H.S. Success in encouraging planting was due in large measure to the generosity of growers. Many put their surplus plants at the disposal of the committee charged with organising the scheme, and Messrs. Carters planted large breadths of Cabbage and other plants for distribution to the small cultivator.

Seeking to annihilate one nation, the enemy devastated the land of another. The homes of Belgium were made desolate and the people scattered, seeking refuge in England, Holland, France, and Switzerland. Here we endeavoured to create temporary employment for those who are cultivators, and, thanks to the generosity of our readers, a little has been done to save willing workers from the misery and decadence of forced and prolonged idleness.

With the object of comforting in some measure the temporarily exiled Belgian and French horticulturists this journal has devoted week by week a page to our foreign guests, and it is with pleasure that we learn from many sources that this innovation is a source of satisfaction both to British and foreign readers.

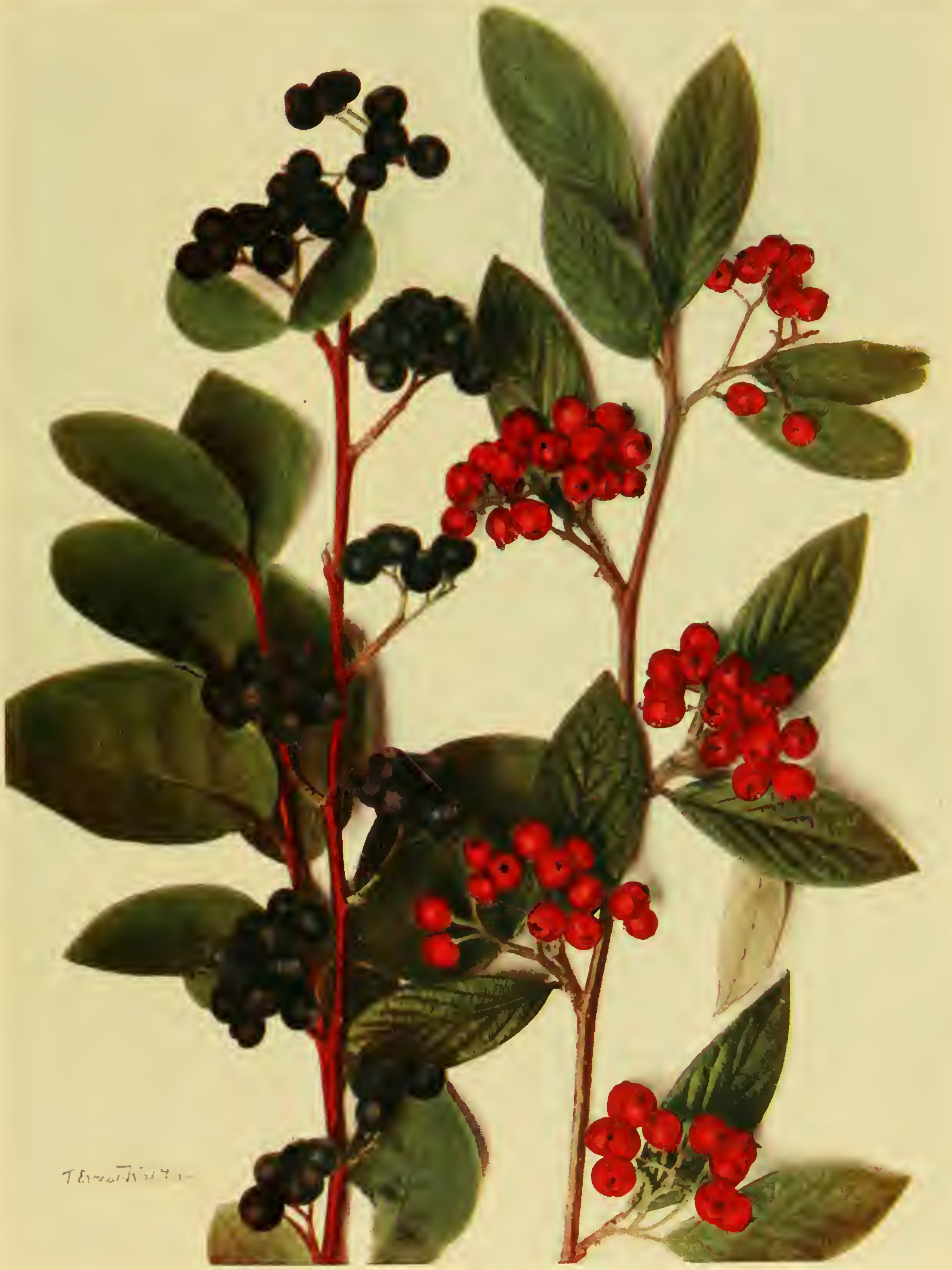
When the time comes—and it is not yet—our readers will, without doubt, join in helping to rehabilitate the skilled and thrifty, much-persecuted French and Belgian horticulturists.

So, with sorrow, but with fortitude, we await what the New Year shall bring forth. There is no need for us to point the way of duty, for all are following it. There is need, however, to remind those who are compelled perforce to stay at home, that much loss and suffering will be prevented if, so far as is possible, they will continue to plant and sow and tend their gardens as heretofore. This is a form of courage which those who can should practise and enforce by example upon others—to continue with purposeful and patriotic resolution to do the things which it was good to do before, unless and until we find some better thing to do.

Our Almanac.—We shall shortly issue a Gardeners' Chronicle Almanac for the year 1915. *In order to make it as useful as possible for reference we shall be obliged if Secretaries of Horticultural, Botanical and Allied Societies, or any of our correspondents, will send us* Immediate Intimation *of all fixtures for the coming year.*

Our Supplementary Illustration.—The coloured plate for this week represents two species of Cotoneaster of recent introduction from China. One of these, C. bacillaris, has been represented by its Indian form for about fifty years. Hooker describes this species in the *Flora of British India* as "a common and variable deciduous Himalayan shrub, the wood much used for walking sticks, hence its specific name." He includes C. obtusa, C. affinis, C. rosea, and C. parvifolia as forms of it. The

Supplement to the "Gardeners' Chronicle."



COTONEASTER BACILLARIS
(BLACK FRUITS)

COTONEASTER SALICIFOLIA VAR. RUGOSA
(RED FRUITS)

Chinese form introduced through Mr. E. H. Wilson is remarkable for the purplish-black colour of its clusters of berries, borne on short branchlets which have red bark when young. The leaves are ovate, smooth and dark green. It is hardy in this country, and is likely to become a favourite garden shrub. C. salicifolia var. rugosa is another variable species. Its berries are scarlet. It forms a rather loose but shapely bush, and in cultivation fruits freely. Writing recently on new trees and shrubs from China, Mr. W. J. Bean states that previous to the introduction of Wilson's Cotoneasters from China, the genus was represented in gardens mainly by plants from the Himalayas. These new Chinese species have brought several quite fresh types into gardens. There is the group of evergreen species, for instance, with rugose leaves, represented by C. Henryana, C. bullata, and the forms of C. salicifolia, all with handsome red fruits; the prostrate C. Dammeri (humifusa), and the very graceful C. Dielsiana (applanata). C. divaricata is more in the way of C. Simonsii. Altogether Wilson has added to our collections at least two dozen new Cotoneasters, most of them quite distinct. Considering how beautiful they are, how easily accommodated in gardens, this number represents a very substantial contribution to the garden flora. C. Franchetii was introduced originally by M. L. De Vilmorin, and grown in his garden at Les Barres. It is a very graceful shrub, eight to ten feet high, with arching branches, smooth, ovate leaves, and egg-shaped berries, coloured yellow and orange-red. The flowers are rose-coloured; it fruits freely every year, and it is quite hardy. C. moupinensis, discovered near Moupine by the Abbé David in 1870, and afterwards by Wilson, has larger leaves than the last-named, and more crowded racemes of Hawthorn-like fruits. In other respects these two species are not unlike each other. C. turbinata is remarkable in being more attractive in flower than in berry. It forms a shrub six feet high, with silky twigs, ovate leaves—the underside covered with soft, silky hairs. The flowers are borne in crowded corymbs much after the style of Laurustinus. The fruits, which mature in October, are smooth and crimson. These plants are all hardy in England, and are represented by good examples in the Kew Arboretum.

War Items.—Mr. Vernon T. Hill, proprietor of the Mendip Nurseries, Langford, Bristol, has accepted a commission in the 12th K.R.R.C., with the rank of captain.

—— We have just received news of the death of Madame Jean Moser, the wife of a prominent French nurseryman of Versailles. She died on the 14th inst., at the age of sixty-two. Sad to say, both her sons, Messieurs Rene and Marcel Moser, are at the front. Monsieur Moser père is well known in England, where he lived for some time before settling at Versailles.

Flowers in Season.—Mr. H. J. Bedford sends from the Palmyra Road Nurseries, Claremont, Cape Town, spikes of Ornithogalum lacteum, known to the Kaffirs as "Chittering Chee," which has remarkable lasting qualities as cut blooms (see *Gardeners' Chronicle*, December 23, 1893, p. 780).

Edinburgh Fruit and Vegetable Market.—In connection with the proposal to remove the Edinburgh Fruit and Vegetable Market from the Waverley Market to the old gasworks site in New Street, several interested visited the place recently, when plans were shown and information given by the city architect. The invitations were sent by Bailie Rose, on the authority of the Markets Committee of the Town Council. The following letter was received from Mr. David King, secretary of the Market Gardeners' Association :—"I have to thank you very kindly for your invitation to view the site and plan of the proposed new market. I have consulted my committee, and our decision is that we have not changed our minds that the proposed site is hopelessly unsuitable from its position and consequently does not interest us in the least." Bailie Rose and others expressed themselves as generally favourable to the scheme, and some discussion arose on various points involved. It was intimated that an opportunity would be afforded to others of seeing the plans if they so wished.

Preserving Cut Flowers.—Reports have been made in these pages of methods which claim to prolong the life of cut flowers. The methods consist in the addition of various salts to the water in which the stalks are placed. Comprehensive experiments carried out by Professors B. M. Dugger and Lewis Knudson at Cornell (see *American Florist*, October 17), show, however, that little, if any, effect is produced by such additions of salts. The trials were made with Cosmos, Petunia, Aster, Verbena, Violet, Coreopsis, Dahlia, Tagetes erecta and T. patula, Geranium, Zinnia, Sweet Peas, and Pansies. Many different solutions were tried, including those of calcium nitrate, zinc sulphate, copper sulphate and common salt. Mixtures of salts were also employed. In no case was any striking result obtained, though not infrequently the treated flowers kept a day or so longer than those put into plain water. The fouling of water due to bacterial action, which takes place when certain cut flowers are kept in water, may be prevented by the addition of a *trace* of zinc sulphate or of copper sulphate. Boiling, burning, or mashing the cut ends of the stems—processes which are often recommended—proved useless, but the daily removal of the cut end—as is so commonly practised—was found to prolong the life of the flower.

American Gooseberry Mildew.—Experiments carried out at the instance of the Russian Ministry of Agriculture, and reported in the *Journal of the Board of Agriculture*, XXI., No. 8, appear to show a ½ per cent. solution of soda (i.e., about ½ oz. per gallon of water), with the addition of a syrup as an adhesive, is a useful spray fluid for preventing American Gooseberry mildew. It is advised that beside collecting and burning fallen leaves and diseased shoots the bushes and the ground beneath them should be sprayed before the buds appear with a 1-3 per cent. solution of sulphate of iron, and that afterwards, every ten days, until they are in leaf, the bushes should be sprayed with the soda solution.

Tree Growth on Clare Island.—Mr. A. C. Forbes has contributed an interesting article on "Tree Growth" to the Survey of Clare Island, undertaken in recent years by a number of specialists. Clare Island, like all the islands of the west coast of Ireland, is practically treeless. Though trees are absent, species occur which under more favourable conditions grew into trees. Such are Quercus sessilifolia, Betula pubescens, Pyrus Aucuparia (timber-producing species), and of scrub species, Ilex Aquifolium, species of Salix, Pyrus Malus, and others. That tree growth on the island was considerable in the past is proved from investigations in the bog area, whereby it is shown that the earliest tree growths of which remains occur were those of Pine and Birch. They were followed by Oak and Hazel, which gradually ousted the Pine. Mr. Forbes concludes that the present stunted condition of tree growth is in part due to human agency and in part to the fact that the summers are cooler now than at the time when the Oak grew in the island.

Publications Received.—*Crop Bulletin*, 121, Ontario Department of Agriculture, Toronto, November, 1914.—*Vinton's Agricultural Almanac and Diary*, 1915. (London: Vinton and Co., Ltd.) Price 1s.

HOME CORRESPONDENCE.

(The Editors do not hold themselves responsible for the opinions expressed by correspondents.)

Ice Fringes.—Referring to the note I sent you, "Frost-cut Alonsoa," on p. 356 of your issue of November 28, I was interested to find in the *Scientific American* of the same date the following paragraph which may be of interest to your readers. For several days the thermometer had been below 40 and not lower than 30, giving peculiar opportunity for the conditions which this article shows :—"Ice Fringes on the Stems of Plants.—This curious phenomenon occurs on plants of comparatively few species, and appears not to have attracted much attention. It has, however, been described with attempts at explanation by Sir John Herschel, John Le Conte and a few others. In the current journal of the Franklin Institute an interesting discussion of the phenomenon is published by W. W. Coblentz of the U.S. Bureau of Standards, who reports the results of his own observations on the ice fringes of Dittany (Cunila Mariana). The fringes form in freezing weather, especially in the autumn, in the form of delicate loops, ribbons or curled flakes on the ice, which are evidently not a form of hoar frost, as the amount of ice is much in excess of that which could be condensed out of the atmosphere. The moisture is undoubtedly supplied by the plant itself, but the mechanism of the process was obscure prior to Coblentz's observations. These seem to prove that the moisture is exuded from the stems by capillary attraction, and the phenomenon is therefore similar in origin to the ground frost formed on the surface of wet soils, except that in the latter case a particle of gravel usually forms the nucleus to start the congelation. When the moisture within the stem is frozen fringes cannot form, nor do they occur when the ground is frozen to the depth of an inch or more. The size of the ice fringes and the height to which they extend above the ground depend upon the rate of evaporation from the stem and upon the amount of moisture in the ground. Fringes form most readily and abundantly on stems having a great number of sap-tubes; differences in the anatomy of their stems explain why some species form fringes while others do not." *J. Edmund Clark, Purley.*

Anemone coronaria and its Varieties.—Mr. Crump states on p. 368 that the bulbs of these plants should not be planted in soil containing fresh animal manures. This is not my experience, provided the land contains plenty of lime, as I have grown these bulbous plants by the thousand in freshly and heavily-manured land. I found that it is more important for the land to be well limed, and I have had plenty of plants which have covered a diameter of one foot. The important point in the cultivation of these plants is to lift the general stock when the foliage is turning yellow, about the middle of June, and stand them in the full sunshine where no moisture can reach them, until they are again required for planting. I am informed that a fungus which has its first stage on this Anemone transfers itself in its second stage to Plums, which it kills, therefore Anemones should be planted as far as possible from Plum trees. *J. E.*

New and Desirable Potatos.—I have grown two new seedling Potatos during the current year which have given most excellent results. Both sorts were grown on stiff land among fruit trees, with no special treatment beyond deep digging and the addition of some light material as decayed vegetable refuse applied at planting time, early in April. Dunnottar Castle is a first early, tubers large, shapely, with a clear skin, most handsome in appearance. Cooking qualities white and mealy, flavour excellent. I look upon this as one of the finest potatos grown. From 1 lb. of seed I lifted 34 lbs. of tubers. Warwick Castle is a second early variety, pebble shape, large, handsome, white, clear skin and excellent cooking qualities. This and the preceding variety were free from disease. From 1 lb. of seed, 6 tubers, I lifted 98 tubers, one root of 21 weighed 9 lbs., a total of 44 lbs., which proves its free cropping qualities. *E. Molyneux.*

POUR NOS AMIS FRANÇAIS ET BELGES.

CHRONIQUE SPÉCIALE.

COMMENT EMPLOYER LES MARAICHERS BELGES ?

La question de l'occupation à donner aux réfugiés belges préoccupe de nombreux économistes. Avec un ensemble superbe, la nation anglaise a pris à coeur de pourvoir les Belges du nécessaire, mais l'inaction dans laquelle ils se trouvent pèse à un grand nombre d'entre eux. Ils préfèrent travailler et ramener de cette façon au strict nécessaire les sacrifices à imposer aux comités anglais.

Beaucoup de réfugiés sont originaires des environs de Malines et du Nord de Louvain, et sont par conséquent au courant des travaux maraîchers. Or, la culture maraîchère est l'une des branches pour lesquelles il y a pénurie de main d'oeuvre en Angleterre; nos compatriotes pourraient s'y livrer à leurs occupations régulières et contribuer à assurer la production normale anglaise, sans créer la moindre concurrence à la main d'oeuvre indigène.

Dans certains milieux on s'est rendu compte des avantages que procurerait à l'Angleterre l'emploi des maraîchers belges, mais différentes difficultés surgissent.

La plupart de ces travailleurs sont mariés, et beaucoup de maraîchers anglais ("market-gardeners") qui pourraient les occuper manquent des installations nécessaires pour loger convenablement une famille. D'autre part, il est difficile pour un réfugié de s'engager alors que sa femme et ses enfants doivent être hébergés ailleurs. La religion et la langue présentent d'autres inconvénients. Nos agriculteurs tiennent à s'établir dans des localités où ils peuvent rencontrer d'autres Belges, où ils peuvent, sans difficulté, remplir leurs devoirs religieux. Pratiquement, l'envoi dans des établissements équivaut à une dispersion complète des colonies dont l'existence contribue incontestablement à maintenir le moral des réfugiés. Au point de vue belge, il est à remarquer aussi que le rapatriement est beaucoup facilité par ces colonies qui assurent un contact plus étroit avec la patrie.

Dès lors, il semble que la meilleure façon de les employer consiste dans l'exploitation d'établissements de culture maraîchère par des groupes de familles. Il y aurait lieu de leur fournir le terrain, d'organiser le travail avec l'aide de chefs de cultures compétents se trouvant en Angleterre, et de disposer des produits obtenus dont la vente viendrait en déduction des frais d'entretien des colons. Lors de la libération du sol belge, la colonie ainsi créée serait rapatriée sans difficultés.

On pourrait aussi songer à la création d'établissements par les réfugiés eux-mêmes. Malheureusement des capitaux sont indispensables et bien rares sont les hospitalisés qui en disposent ici. De plus, il leur manque les connaissances techniques et commerciales pour adapter leur habileté professionnelle aux exigences de la culture et du marché anglais. Un autre inconvénient, et non des moindres, consiste dans la récolte échelonnée des produits maraîchers : il est impossible de cesser l'exploitation à un moment donné, lorsque la Belgique réclamerait le retour de ses citoyens; les semis et plantations se font constamment, les récoltes s'opèrent par fractions de telle sorte que certains produits étant vendables, d'autres ayant entraîné des frais de culture tout aussi élevés, n'ont pas de valeur immédiatement réalisable. Il en résulte que l'exploitant serait rivé pendant quelque temps à sa culture et que son rapatriement causerait de sérieuses difficultés; dans certains cas il risquerait même d'être totalement perdu pour la Belgique, ce qui n'est souhaité par aucun patriote belge et sans doute non plus par les maraîchers anglais qui verraient surgir à leurs côtés une concurrence permanente. *Agricola.*

À GAND.

Nous avons reçu la lettre suivante qui nous donne de nouveaux renseignements sur la situation dans la banlieue gantoise :—

Depuis que je vous ai écrit (voir page 367), il s'est produit peu d'événements de nature à influer sur la situation de l'horticulture. On continue de faire quelques envois de plantes et de bulbes vers les pays neutres, mais tout commerce avec les alliés reste impossible.

Dans la seconde moitié de novembre des gelées assez fortes se sont fait sentir. La première nuit déjà le thermomètre marqua 6° C. sous zéro (21° 2 Fahr.) et dans des situations exposées on enregistra même jusqu'à 9° C. de gelée (15° 8 Fahr.). Ce refroidissement était inattendu et il fut impossible de prendre des précautions. Dans plusieurs couches j'ai découvert des glaçons et on comprendra aisément que des dégâts importants ont été occasionnés. Les Azalées de l'Inde non rentrées sont radicalement détruites; les Lauriers ont beaucoup souffert. Sous verre les jeunes pousses des Azalées ont également été atteintes par la gelée, mais les dégâts seront moindres, la taille n'étant pas encore effectuée. En beaucoup d'endroits les Palmiers auront leurs feuilles tachetées.

L'écoulement des plantes ayant été insuffisant, beaucoup d'horticulteurs les ont entassées dans leurs serres au point que la lumière y fait défaut. D'autre part, bien que les arrivages de charbon soient actuellement suffisants, les producteurs l'emploient très parcimonieusement, et beaucoup de plantes, en particulier les Palmiers, ne reçoivent que la température strictement nécessaire pour les empêcher de périr. Je crains que dans ces conditions, beaucoup de végétaux ne soient perdus après l'hiver. Pratiquement le mal est moindre, vu l'importance du stock.

Plus grave pour l'avenir est peut-être le découragement qui s'est emparé de beaucoup de producteurs; ils s'occupent très peu de leurs plantes, n'exécutent guère de bouturages ni de greffages, et se comportent absolument comme si tout était compromis. Dans la mesure de mes moyens, je m'efforce de relever leur moral.

En ce qui concerne notre projet de réunir des commandes pour nos horticulteurs, j'ignore si nous pouvons faire du travail pratique. Depuis ma dernière lettre, il a été défendu d'exporter des plantes vers l'Angleterre. Laissons là l'affaire pour le moment. Si la situation se modifie, nous pouvons peut-être prendre des mesures. *D. D., Gand, le 12 décembre, 1914.*

KORT OVERZICHT VOOR DE VLAMINGEN.

Van verschillige zijden zoekt men den belgischen vluchtelingen bezigheid te verschaffen; de werkeloosheid die hun opgelegd is verveelt velen van hen.

Daar de meeste van hoveniersafkomst zijn, kon men ze in moesteelt gebruiken, waar de Engelschen gebrek aan handarbeid hebben. Men stelt voor bedrijven in te richten waar verschillige familiën zouden op geplaatst worden.

Rond Gent heeft de vroege vorst nog al schade aangericht bij de plantenkweekers. De hooge prijs der steenkolen doet er ook te weinig stoken in de broeikassen zoodat na den winter vele planten kumen bedorven zijn

NOUVELLES DIVERSES.

Nécrologie.—Nous apprenons avec peine la mort de Madame Jean Moser, épouse de l'horticulteur français bien connu, décédée à l'âge de 62 ans, le 14 décembre, en sa demeure à Versailles. Ses deux fils, René et Marcel, retenus au front de l'armée française, n'ont pas eu la consolation d'assister aux derniers moments de leur vénérée mère. Nous présentons à nos amis Jean, René et Marcel Moser nos condoléances émues.

Les Marchés Français. — Pomme de terre : La consommation de ce tubercule est fortement concurrencée par les arrivages de salades, de légumes frais, préférés pour le moment par la population, tant qu'ils pourront alimenter Paris; puis le temps humide et chaud est défavorable à sa conservation, aussi les acheteurs ne cherchent pas à augmenter leurs stocks, il faut accorder des concessions pour vendre. On cote : strazeele du Nord, 90 à 92; industrie du Nord, 65 à 68; royale du Gâtinais, 140 à 150; saucisse de choix du Gâtinais, 140 à 150; du Poitou, 110; de la Sarthe, 90 à 92; ronde jaune, 80 à 85; ronde blanche, 60 à 62; early rose, 80 à 85, le tout aux 1,000 kilos, sur wagons complets, gares départ. Haricots blancs, 65; lingots, 72 à 75; suisses rouges, 65; flageolets verts, 70 à 72; flageolets blancs, 65 à 67; Lentilles, 92 à 95, les 100 kilos rendus Paris.

À Bruxelles.— Nous apprenons que les légumes y sont très abondants, toute la production devant être consommée sur place. Le carreau des fleurs de Nice, si actif les autres années, est désert; les Anémones, Narcisses, Mimosas, Violettes, Renoncules qui normalement permettent une décoration florale peu coûteuse des restaurants, font défaut. Les fleurs offertes par les horticulteurs indigènes sont répandues à profusion sur les tombes des soldats belges morts dans les hôpitaux. Les fruits se sont vendus à des prix assez élevés grâce à l'interruption dans les communications qui rendit la capitale dépendante de la production dans ses environs immédiats. Le Raisin se vend un peu mieux maintenant—0 fr. 60 à 1 fr. le kg.; le gros de la production s'est vendu à perte en septembre, octobre, et novembre, les viticulteurs ayant avancé la maturation pour éviter l'emploi de combustible. Les quelques stocks de charbon sont débités pour les besoins domestiques à raison de 4 fr. les 100 kg.

Faut-il débaptiser?—Des correspondants du *Möllers Deutsche Gärtner Zeitung* préconisent la traduction en Allemand des noms de variétés de plantes obtenues en France, Angleterre, Belgique, etc., de façon à boycotter en horticulture les langues des Alliés. Des propositions analogues ont été faites dans nos rangs. L'avenir nous apprendra si l'Horticulture comprendra le boycottage de cette façon et si les noms donnés par les obtenteurs ne seront pas respectés d'avantage que ce n'est le cas maintenant, à condition qu'on évite un choix de mots qui deviennent d'une prononciation impossible dans certaines langues. Ce serait une façon de rendre hommage de part et d'autre, aux chercheurs qui dotent l'Horticulture de richesses nouvelles.

À propos de Chicorée de Bruxelles.—Nous avons parlé (voir pages 360 et 397) des arrivages de Witloof ou Chicorée de Bruxelles au marché de Londres. Un mouvement a déjà été créé en vue de pousser à la consommation de cet excellent légume. Des petites brochures, indiquant une série de préparations, sont remises aux acheteurs. Le prix actuel du Witloof au marché de Covent Garden est de 5 à 6 pence la livre (en gros).

HOME CORRESPONDENCE.

(Continued from page 413.)

Primula kewensis.—In view of the Didymusian attitude of some Mendelians and Mutationists with respect to the character of Primula kewensis, evidenced by a note in the *Journal of the R.H.S.*, Vol. XI., p. 263, it is necessary that I should repeat the story of the hybrid origin of that plant. I am not concerned here as to the specific differences between the two parents, P. floribunda and P. verticillata. As represented by cultivated examples at Kew and elsewhere they are distinct enough. Sir Joseph Hooker and Professor Balfour agree that the two are closely related, and it may be that P. verticillata of South-West Arabia and Abyssinia is a geographical form of P. floribunda, evidently a variable plant in the Himalaya, though stable enough under cultivation here. It has been grown in quantity at Kew since 1883, and I have never seen any appreciable variation among the seedlings annually raised; they are all true to type as represented in the *Botanical Magazine*, t. 6712 (1883). This is described as follows:—Whole plant clothed with more or less glandular jointed soft hairs. Rootstock woody. Leaves 3 to 6 inches long, contracted into a very broad petiole of variable length, coarsely crenately toothed. Scapes numerous, 4 to 8 inches high, slender, bearing two to six superposed whorls of three to six flowers, subtended by an involucre of sessile-toothed bracts 1 inch or less long. Corolla golden yellow, tube slender, ½in. long, hairy, limb flat, ½ inch across, mouth small. There is no mention of mealiness, and, so far as I have seen, there never is any on P. floribunda as known in gardens. At Kew P. verticillata is raised annually from seeds of our own saving. It is the large-flowered, very mealy form introduced from Abyssinia by Messrs. Veitch in 1870; I do not remember to have seen in cultivation any other form of this species. Nor have I seen among the large batches of seedlings of it raised at Kew, where it is treated as an annual, any variation except in the size of the leaves and flowers, and these can be set down to cultural conditions. In 1898 there appeared among a batch of seedlings of P. floribunda, raised from Kew-saved seeds, one plant that differed from the rest. It was marked and grown on, and when it flowered it was seen to be "something new." When it flowered the following year (1900) it was shown at a meeting of the R.H.S. as P. kewensis, a chance hybrid between P. floribunda and P. verticillata. We concluded that this must be its parentage as it combined the characters of these two species, which were placed together in greenhouse No. 4 when in flower, rendering a cross quite possible. However, to test the question of origin, we isolated and carefully crossed the two species again, taking the usual precautions against failure, and we succeeded in producing the hybrid a second time. Messrs. J. Veitch and Sons eventually distributed it, propagating it vegetatively, as it was at first sterile. They afterwards obtained seeds of it, with the result that variation appeared, always, however, so far as I know, in the direction of P. verticillata, which, according to Mendelians, thus proved to be the dominant parent. I have seen in Messrs. Veitch's nursery plants raised from seeds of P. kewensis which might have passed for P. verticillata, and we have had similar seedlings at Kew. We have some now, raised from seeds sown this year, which are very mealy. Another fact of importance is that whilst P. floribunda is decidedly hairy, there are no hairs on P. kewensis; when the latter is not absolutely glabrous it is mealy. That P. kewensis is a hybrid between the Kew representatives of the two species is as certain as that Kalanchoë kewensis was raised from K. flammea and K. Bentii, and Streptocarpus kewensis from S. Rexii and S. Dunnii. What is more, if I thought it worth while I could prove it again by repeating the cross. When those who doubt the origin of P. kewensis succeed in raising its like from P. floribunda uncrossed with P. verticillata I will be convinced perhaps that we were mistaken as to the origin of the first plant, and bunglers in our effort which produced it artificially. *W. W.*

Nomenclature and Anger.—Your leading article on "Nomenclature and Anger" is well timed, and will, I hope, appeal to British gardeners as one of sound common sense. Unfortunately, the principle which you so strongly deprecate has been advocated in the daily Press from influential quarters in British horticulture, and I am delighted to see the matter taken up by the leading horticultural journal of this country. It is comforting to know that the powerful influence of the *Gardeners' Chronicle* is against creating such a far-reaching precedent as changing the names of plants already in commerce, and it is to be hoped that your columns will be opened for the opinions of our leading gardeners. I have worked for a number of years in German establishments, have an intimate knowledge of German horticulture, have been a regular reader of *Möllers Deutsche Gärtner Zeitung*, and, like you, I must confess surprise at this journal's extravagant claim; but one must confess even greater surprise to discover that the principle, so inapposite to our national character, finds adherents in this country, and only good can come from publicity being given to the matter. *Furor causa est.*

A Selection of Apples.—Mr. Shakelton (p. 402) takes me to task for my criticism of the wide selection of varieties recommended by Mr. Weston, and settles the point by saying that several excellent reasons for the selections are given. Now, these are just the points I do not agree with in Mr. Weston's reply, because the reason for the huge list given is that a big display of sorts may be furnished at a show or in the fruit room at home. For the benefit of the ordinary grower who does not care for shows or even the appearance of the fruit room, this is a poor argument, especially when some of the sorts are of little value beyond appearance. To help those persons who prefer utilitarian methods I wrote my first criticism. Now, Mr. Shakelton in the following sentence entirely stultifies his previous expression of opinion when he says: "I find it more interesting to many employers to have a *fair* variety of good sorts" (the italics are mine). If Mr. Shakelton will give Grenadier a fair chance—grown as a free bush—he will be inclined to extend the number of trees and grow fewer cordons. Warner's King does not succeed nearly as well generally as it used to do, even in Kent. Its constitution appears to be weakening, while canker increases, and certainly no variety is more addicted to scab. Ere long this Apple will be ousted by Norfolk Beauty, which comes into use at the same time and has all the points of a good Apple in growth, being infinitely superior to Warner's King. Mr. Shakelton makes an astounding statement when he says: "I should be badly off if I had to depend upon any of these varieties—Bramley's Seedling, Newton Wonder, Dumelow's Seedling and Lane's Prince Albert." Why? I would ask. Cannot he grow these universal varieties? Mr. Merryweather—no mean authority—describes the first as the finest Apple on earth, a remark endorsed by many. It will grow anywhere where Apples succeed. I have never seen it miss a crop during the twenty-five years I have grown it. Newton Wonder succeeds in a like manner and will keep as long as Apples are required, and its appearance could not be better. Annie Elizabeth is a good Apple when it gives a crop, but this is seldom. Surely Mr. Shakelton does not compare Blenheim Pippin or even Ribston Pippin with Cox's Orange Pippin? Even for exhibition either would have but a poor chance in comparison, nor will either keep so long. Mr. Bunyard often shows Cox's Orange Pippin in April. I never advocated the discarding of Blenheim Pippin. It is one of my favourites for cooking, as it is with many who prefer an Apple that needs no sugar when cooked; but as to flavour, it does not compare with Cox's Orange Pippin as a dessert fruit. Sturmer Pippin may come in after many sorts are over, but what for, I would ask. It cannot be for appearance, and certainly not for quality. It may do to swell the number for a collection at a show, but will not find many admirers. I think in the near future Mr Shakelton will find out the way to grow Charles Ross of suitable size, even for dessert. *E. Molyneux.*

Late Peas (see pp. 373, 389).—Are not very late Peas more a case of climatic conditions than of anything else? I remember when many years ago the gardens of the late Mr. Hoey, of Dromalane, in this town, were made, the autumn was particularly mild, and I insisted that the latest Peas should not be gathered until I gave the order. On December 24 I saw a change impending, and I went over and told the gardener to gather the Peas. That night a severe frost occurred and the Peas were killed to the ground. I was told afterwards that the Peas were a little hard, but, all the same, they had them for their Christmas dinner. *T. Smith, Newry.*

Yew.—All sorts of ideas appear to be prevalent concerning the Yew tree. Some assert that only the female tree is poisonous, others that it is the male tree. Some state that the leaves are poisonous when half dried and withering, others that only the fresh leaves are fatal. Some believe the fruits are poisonous, and others stoutly assert that they are not. The real truth is that all parts of the tree are poisonous, except the pulp of the fruit. If the seeds are chewed they would prove just as poisonous as the leaves, but as a matter of fact neither boys nor birds, as a rule, crack the seeds, but the former spit them out and the latter swallow and excrete them whole, evidence of which may be obtained on palings near any female Yew tree. In rare cases in which the seeds have been cracked and eaten by children they have usually proved fatal, death depending upon the amount eaten. The active principle, taxine, is a heart poison, and experiments made many years ago showed that Yew leaves could be given to cattle with ordinary fodder up to a certain percentage without death resulting, but that if animals ate the leaves on an empty stomach or when ill nourished from scarcity of green food, it always killed them, if a sufficient amount was eaten. If well-fed it only depressed the heart's action. How or why a plant is able to secrete a poison in the seed and not in the pulp of fruits is a very interesting question. The nux vomica fruit is another instance, since the pulp is not poisonous and is eaten by monkeys. *E. M. Holmes.*

The Week's Work.

THE ORCHID HOUSES.

By H. J. Chapman, Gardener to Mrs. Cookson,
Oakwood, Wylam-on-Tyne.

Temperatures.—It has been necessary lately to utilise the hot-water system by day as well as by night to maintain the required temperatures. It is a much more difficult matter to keep up temperatures in houses when cold winds prevail than during severe frosts, and such times necessitate a larger consumption of fuel, even if the weather is fairly mild. It is therefore desirable that no higher temperatures should be kept than are really necessary.

Watering and Damping. If damping is done with discretion there will be little necessity for affording moisture at the roots, but care must be observed that any excess of moisture evaporates before the cooler evening temperatures are reached. No hard and fast rule can be laid down in this respect, because the situations and structural differences make all the difference. Watering must be done carefully; even with plants in an active state of growth the compost should be permitted to become reasonably dry before water is afforded the roots, but not so dry as to cause shrivelling in the plants.

General Remarks.—For the next few weeks work in the Orchid houses will consist chiefly in cleansing the plants. It is a good plan to overhaul all plants in a more or less dormant condition with a view to destroying insect pests that may have accumulated about their bases or amongst the dead leaf bracts. Such plants as Sobralias that are not usually infested with insect pests, and are not subjected to frequent cleansings, should have their leaves sponged and accumulated dust and other foreign matter removed. Plants of this class that need re-staking may be cleared of leafless and old flowering growths and furnished with fresh stakes to give a smart appearance. Take the opportunity to wash the pots and the material on the stages, also remove any dirt from the glass. The short days afford opportunities for preparing composts. A supply of peat, Osmunda fibre, Polypodium fibre and turfy loam should be got ready and stored for use. Sphagnum-moss also may be picked and washed. It is advisable to get in a stock of Sphagnum while the weather is open, as it is not easily procured in time of frost. The moss may be stored outside on boards and covered with an old mat; it will, if turned occasionally, keep in a good condition for some weeks.

FRUITS UNDER GLASS.

By W. HEDLEY WARREN, Gardener to the Aston-Clinton Park Estate (the Rt. Hon. LORD ROTHSCHILD), Buckinghamshire.

FORCING CHERRIES.—The time to begin to force Cherries depends upon the date on which ripe fruit is required. If the trees are started the first week in January, sixteen weeks will be necessary, but fourteen weeks will suffice if the trees are started the first week in February. The calculation must be approximate, as the general condition of the season will extend or shorten the time required. The trees should never be subjected to sudden transitions from cold to heat, for this would be detrimental to the bloom buds. Close the house for a week or two before employing fire-heat, and maintain a temperature of 40° by night and 45° by day, after which the night temperature may be raised to 45°, with a corresponding rise of 5° by day. Immediately the trees commence to bloom keep the temperature as regular as possible, at about 50°. When the stoning period is over raise it to 60°, at which point it may remain, but a rise of 5° or 10° from sun-heat may be allowed. In raising the temperatures these five or six degrees in a fortnight let it be done gradually, and during every stage of forcing admit plenty of air as often as opportunities permit. It is, however, necessary whilst the trees are in bloom to prevent currents of cold air passing through the house, as at this period the blossoms are easily injured. Let the soil be always moderately moist, but never excessively wet. Weak liquid manure may be applied to the roots as soon as the blossoms expand, and the water should be applied at a temperature slightly above that of the house—never below—or much of the bloom and fruit may drop. During the stoning stage apply little or no water to the border, provided the soil is in a fairly moist condition. An excess of moisture would be decidedly injurious at that stage, but after the fruit has finished stoning and begun to swell, water may be applied frequently and more copiously, until the fruit begins to change colour, when watering should be discontinued. The trees should be syringed overhead daily from the commencement, and discontinued only whilst the trees are in bloom, or when the fruit is ripening. But after the fruits have been gathered the syringing should be recommenced, to keep the foliage clean and healthy.

A RETROSPECT.—The fruit crops from permanent trees under glass have been—taking them all round—exceptionally good during the past season. All the trees have been remarkably free from insect pests, the wood is well ripened, and the quality and general condition of the buds augur well for the season of 1915. The following is a list of fruits given in the order of their ripening here during the past season :—*Peaches:* Peregrine, fruit of excellent quality, a valuable early variety that forces well. Crimson Galande, fruits good both in colour and quality, but slightly under size. Dymond, fruit large, well coloured, and of excellent flavour; many turned the scale at eleven and twelve ounces each. Stirling Castle, fruits excellent in quality, colour and flavour. Bellegarde, fruit extra large, good alike in quality, colour and flavour. Royal George, not so satisfactory as usual, many of the fruits being blistered. Grosse Mignonne, medium crop, but fruit of fine colour and flavour. Violette Hative, a good all-round crop of well-finished fruits. Walburton Admirable, medium crops, fruit extra large, but not so well finished as usual. Golden Eagle, excellent crop, the fruits specially good in colour and flavour; this good late Peach should be grown in every collection. Prince of Wales, heavy crops, many of the fruit weighing from fourteen to sixteen-and-a-half ounces each, colour and flavour exceptionally good for this variety. Gladstone, a good crop of well-finished fruits. Marquis of Downshire, medium crop, the colour, flavour and finish of the fruits being very good for a late variety. *Nectarines:* Précoce de Croncels, medium crop of large, well-coloured fruits of excellent flavour. Lord Napier, fruit inclined to crack, on all trees, and rather disappointing this season. Humboldt, medium crops of large, well-coloured, highly-finished fruits. Pineapple, excellent crop, the size, colour, flavour and finish of the fruits were never better. *Grapes:* Black Hamburgh and Mill Hill Hamburgh, in both early and mid-season houses, gave excellent crops of well-finished berries. Madresfield Court, the bunches were extra large and the berries were finely coloured and well finished, with no signs of splitting. Muscat of Alexandria. crops on young vines were very good, both in quality and flavour, not so good on older vines. Black Alicante cropped well, and the bunches were well finished; those hanging are keeping well. Prince of Wales, the bunches were exceptionally good alike in colour, size, flavour and finish. Mrs. Pince, size of bunch and berry good, but the berries were slightly lacking in colour. Appley Towers, excellent alike in size of bunch, berry, colour, flavour and finish. *Cherries:* Frogmore Early Bigarreau, Black Tartarian, Elton and Florence were all exceptionally good in size, colour and flavour of the fruits. *Figs:* The different varieties matured good all-round crops; Brown Turkey was exceptionally fine in size and flavour.

THE FLOWER GARDEN.

By W. CRUMP, Gardener to Earl BEAUCHAMP, K.C.M.G., Madresfield Court, Worcestershire.

HELLEBORUS.—The Christmas Roses are full of buds and healthy flowers, and should be protected by a cold frame or hand-light. Never close the frames, or the flowers will be discoloured and suffer by damp.

SHRUBS WITH COLOURED BARKS.—The forms of Deutzia crenata known as candidissima, Watereri, and Wellsii, have all finely coloured barks, and show to best advantage when planted in masses. Salix argentea var. britzensis, several of the Cornuses—Red and Black Dogwoods—and Rubus leucodermis, the White-washed Blackberry, planted in front of a Yew hedge, are attractive all the winter.

WILD GARDEN.—Although it would be a mistake to make everything spick and span in the wild garden, like the dressed grounds, it should be made tidy in winter. The tall, dry shoots of certain of the large-growing plants, such as Epilobium, Lythrum, Scabious and Helianthus, should be cut down, but the more tender kinds—such as Montbretia and Clematis Davidiana—should have their summer growths simply bent down, with a view to protecting the crowns against very severe frosts, as it is wrong to deliberately take away Nature's own protection to these half-hardy subjects and expose them to the rigours of a hard winter. Hardy Ferns come under the same category. In low-lying places a little common bracken Fern should be wrapped around the stems of Dracaena indivisa and hardy Palms. The crowns of Eremurus robustus should be protected from rains by arranging a square of glass on half bricks. If the heart of the crown fills with moisture, and frost follows, the flower-spikes may be spoiled.

A RETROSPECT.—Where the note-book has been used freely since the beginning of the year it will be interesting to balance failures with successes, the former being generally more indelible. The dry summer has been generally blamed, and sometimes justly so, for failures, but the capable gardener provides, to some extent, for such emergencies as drought. In the case of severe late spring frosts he is helpless. Flowers, generally, have been plentiful and good, with the exception of Sweet Peas. Roses flowered grandly, especially many of the garden autumn-flowering varieties; in fact, I have never known them to be better or more profuse in bloom. Even as I write (December 16), we could gather sprays of good blooms of Jessie, Mrs. W. H. Cutbush and Hermosa.

THE KITCHEN GARDEN.

By R. P. BROTHERSTON, Gardener to the Earl of HADDINGTON, Tyninghame, East Lothian.

FRENCH BEANS.—In many gardens, where vineries are used for this crop, the forcing is begun about this time. The plan of placing hot manure on the inside border to facilitate the starting of the vines affords an opportunity to start the Beans, which may be grown either in 7-inch pots or in deep boxes, where space is limited. The latter can be arranged in less room than pots, and with careful watering excellent returns may be expected, and less labour will be involved. The forcing of French Beans must not be attempted in a temperature of less than 60°. Attack by red spider is the constant fear of those who force this crop, so that every precaution is needed in the way of preventing draughts and over- and under-watering.

LETTUCE.—A sowing may be made, in heat, of a good Cabbage variety of the Tom Thumb type, and also of a larger-growing variety, the young leaves of which are not infrequently valued at the period when the supply in mid-spring becomes very straitened. Cutting-boxes are suitable for raising the plants, and the seeds germinate in a few days when the boxes are placed in a house with a stove temperature. It is important to remove them to a cool house when this stage is complete. Plants raised in boxes in the autumn may be transplanted into vacant places in frames, or in cold pits, where they will grow more rapidly. I find that Cos varieties develop so slowly, and are so late, that they are not worth cultivating at this time of the year.

SEAKALE.—Seakale requires less heat than hitherto was necessary. In an ordinary establishment a part of the Mushroom house should be set apart for this crop for the next few months, a sufficient number of crowns being introduced at short intervals to meet current demands. It is not essential that the root part be entirely covered, but there should be sufficient soil to keep the roots steady. If other vegetables are scarce, a second cutting may be taken off the stronger roots to ensure the forcing of this secondary crop; the first heads must be cut carefully, removing only as much of the crown as will hold it together, after which the adventitious buds immediately below will break. A too deep decapitation removes these with the crown.

LEEKS.—Large Leeks have become almost a necessity in gardens, and in order to encourage size it is not too early to sow seeds. It is better to sow two or three seeds in 2½-inch pots, drawing the supernumeraries after germination and leaving only one to grow, rather than to raise them in boxes, as is customary for large Onions. The compost should be open, and made of two parts loam to one of leaf-mould. I have seen excellent Leeks grown entirely from the seed stage in fine leaf-mould. The seeds germinate rather slowly, but this is not detrimental. The pots must be examined while the plants are small in order to find out the condition of the roots, which multiply at an amazing rate. Some time before they become entangled the plants should be shifted into larger pots, using compost of a similar nature. They must be grown on steadily without a check, lest flower production should be caused during late summer. There are many excellent strains of Leeks, Pitt's Lyon being greatly approved in the North. Many growers, however, select stocks of their own, and they need not rub out the seeds until they are wanted for sowing. The seeds keep admirably on the heads, only they must be kept perfectly dry, moisture having a tendency to induce germination.

PLANTS UNDER GLASS.

By C. H. Cook, Gardener to the Earl of Derby, Knowsley Hall, Lancashire.

Forcing Plants.—After Chrysanthemums have finished flowering, forced bulbs and shrubs may be employed for conservatory and house decoration. Certain bulbs are ready for forcing, including Daffodils, Tulips, and Roman Hyacinths, also Lily-of-the-Valley. The following kinds of shrubs are popular for forcing:—Lilac, Deutzia, Rhododendron indicum (Azalea), R. molle, and the double-flowering Cherry. In commencing to force shrubs do not employ much heat, but rather increase the temperature gradually as the plants begin to make growth. Use the syringe frequently to promote a moist atmosphere and to keep the plants free from aphis. Early-flowering Rhododendrons may be had in bloom in January if the plants are placed in a greenhouse and syringed daily, taking care that they do not suffer from drought at the roots. Plants of Lilium Harrisii, L. longiflorum and retarded bulbs of L. speciosum that are showing flower should be fed with weak liquid manure. Tie the spikes to neat stakes. Green fly must be kept in check by fumigating the house and sponging the flower-buds with soapy water.

Caladium and Gloxinia.—The tubers of both these plants should be examined occasionally to ascertain their condition, and they must be protected from drip or excessive moisture in any form. A few varieties of Caladium—such as minus, Argyrites and erubescens—may be started in pans filled with coco-nut fibre or leaf-mould. When a little growth has been made, transfer the plants to 3½in. and 4in. pots. Larger-leaved varieties may be started in 4 and 5 inch pots and repotted when the receptacles are filled with roots. Water the roots very sparingly until growth is well advanced, but use the syringe frequently to keep the atmosphere charged with moisture. Tubers that have been stored in sand or dry soil are showing signs of growth, and the more forward of the stronger roots may be potted in an open compost such as is furnished by a mixture of fibrous loam, leaf-mould, and dried cow manure broken into small pieces, adding sufficient sand to keep the compost open. The plants require plenty of moisture in the atmosphere, therefore damp the spaces between the pots, etc., but give the roots very little water for some time to come. Tubers of Begonias must be kept free from frost and moisture for the present.

General Remarks.—Such plants as Fuchsias, Cannas, and Sweet-scented Verbenas that are stored for the winter should be examined at intervals with a view to watering any that have become excessively dry at the roots, and this is especially necessary in the case of one-year-old Fuchsias. Fuchsias trained to the rafters of the greenhouse may be pruned severely, the loose bark removed, and the stems cleansed. Wash all houses as they become vacant before fresh plants are brought into them, also wash the roof-glass on the outside.

THE HARDY FRUIT GARDEN.

By J. G. Weston, Gardener to Lady Northcote, Eastwell Park, Ashford, Kent.

Blackberries.—A few varieties of the Blackberry are well worth planting, as, where they succeed, they are prolific fruiters. The plant usually thrives under the same treatment as that recommended for the Loganberry, or it may be planted in odd corners of outside gardens or on the boundaries of orchards. In such situations the plants may be almost left to themselves, especially if there is sufficient room for them to ramble at will.

Protection of Fig Trees.—Where previous experience has proved the necessity of protecting Fig trees during severe weather, steps should be taken to have the protective material ready to hand, so that should there be a change to colder conditions there need be no delay in making the trees safe. In gardens in the south and western counties it is rarely necessary to protect Fig trees, especially if the trees are well grown—that is, have short, stumpy growths, which always ripen well. It is trees with soft, sappy growths, resulting from an unrestricted root-run in rich soil, and with overcrowded shoots, which are most liable to be injured by frost.

General Work.—Endeavour to keep the garden tidy, for there is no economy of labour in allowing heaps of rubbish to accumulate in corners or in the yards. If such rubbish be collected and burnt regularly, the appearance of the garden will be much improved, and the ashes will form valuable material to return to the land. See that permanent labels are attached securely to all varieties of trees, for correct naming renders the fruit garden more interesting to visitors. Continue to push on with the work of pruning and training during favourable weather. When the ground is hard with frost wheel manure to where it is required to be spread.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

December 15.—*Present:* Mr. E. A. Bowles, M.A., F.L.S. (in the chair), Prof. Bateson, Dr. Keeble, Messrs. Worsley, Fawcett, Worsdell, Fraser, Hales, Elwes, Chittenden (hon. sec.), with Miss Pellew and Mr. Coutts visitors.

Pelargonium hybrids.—Mr. J. Fraser showed dried specimens to illustrate the variation in certain forms, such as Pelargonium Moreanum, and made remarks on the origin of certain hybrids.

Primula floribunda, etc.—Prof. Bateson exhibited a range of forms raised between a plant of Veitch's form of Primula × kewensis (stated to be a piece of the original plant) and P. floribunda. The ovules of the P. × kewensis plant used appear to be infertile, but the pollen is fertile with P. floribunda (apparently not with P. × kewensis and P. verticillata). The plants shown exhibited white, sulphur, lemon and other shades of yellow, and one had deeper yellow flowers than × kewensis. Variety was also seen in the size of leaf and in degree of hairiness. The plant of kewensis used is the only one that has given breaks of this nature. It belongs to the small-flowered type, which has the normal number of chromosomes; not to the large-flowered type with double the normal number of chromosomes.

Seeds of forest trees.—Mr. Elwes showed ripe seeds of Aesculus indica sent to him by Lord Ducie, and ripened at Tortworth, together with seeds of Juglans nigra and of Butter-nut ripened at the same place. He remarked upon the great length of radicle produced by the seedlings of Juglans nigra, which he had raised, as compared with the mass of fibrous roots produced near the surface by the Butter-nut, although the trees apparently grew under the same conditions in nature. He thought it very desirable that comparison should be made with the behaviour of seedlings raised in other places and from seeds of American origin.

Hedycium Greenii producing apical bulb.—He also showed a stem of the Scitamineous plant, Hedycium Greenii, which he had collected in Bhutan, and which had flowered with him at Colesborne. He had removed the flower shoot and the plant had produced a bulb at the apex of the stem left.

Mr. Elwes also showed flowers of Alstroemeria Hookeri and Tricyrtis stolonifera.

Frost damage to Apple.—Mr. Chittenden showed an Apple with ten longitudinal grooves of about a quarter inch depth on the outside, the grooves being lined with russet. He called attention to the small fruits damaged internally by frost, which he exhibited earlier in the year, and pointed out that the grooves corresponded with the position of the primary vascular bundles which had been injured by frost. These bundles in the specimen exhibited still showed signs of the damage and the failure to grow normally was no doubt due to the interference in the sap flow brought about by this injury.

Apple in bird's nest.—Mr. Wilson Fox, of Carmino, Falmouth, sent a photograph showing an Apple attached to the tree and resting in a bird's nest, apparently that of a redpole.

MARKETS.

COVENT GARDEN, December 21.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate not only from day to day, but occasionally several times in one day.—Eds.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Arums (Richardias) per doz. ..	6 0- 8 0
Azalea, white, per doz. bunches..	4 6- 5 0
Bouvardia, white, per doz. bun...	5 0- 6 0
Camellias, white, per doz. blooms	1 9- 2 0
Carnations, per dozen blooms, best American varieties ..	2 6- 4 0
— smaller, per doz. bunches..	18 0-21 0
— Carola (crimson), extra large	2 6- 3 0
— Malmaison, per doz. blooms	
— — pink ..	12 0-15 0
Christmas roses, per doz. ..	2 0- 2 6
Chrysanthemum, specimen blooms, white, per doz. ..	2 0- 3 0
— yellow per doz.	2 0- 2 6
— pink ,,	1 9- 2 0
— bronze ,,	1 9- 2 0
— white, medium per doz. ..	1 6- 1 9
— coloured, per doz.	1 3- 1 9
— Spray, white, per doz. bun...	6 0 10 0
— — yellow, per doz. bun. ..	6 0- 9 0
— — pink, per doz. bun. ..	8 0-12 0
— — bronze, per doz. bun. ..	9 0-10 0
Daffodils, single, per doz. bun.	18 0-21 0
Eucharis, per doz.	2 6- 3 0
Gardenias, per box of 15 and 18 blooms.. ..	5 0- 6 0
Hyacinths, Roman, 12's, per doz. bunches ..	12 0-15 0
Lapageria alba, per doz. blooms ..	— —
Lilac, white, per doz. sprays ..	4 0- 5 0
— mauve ..	5 0- 6 0
Lilium auratum, per bunch ..	2 6- 3 0
Lilium longiflorum, per doz., long	4 6- 5 0
— — short ..	4 0- 5 0
— lancifolium album, long ..	2 6- 3 0
— — — short ..	1 6- 2 6
— — rubrum, per doz., long ..	1 6- 2 0
— — — short ..	1 0 —
Lily-of-the-Valley, per dozen bunches:	
— extra special ..	15 0 18 0
— special	10 0-12 0
— ordinary ..	8 0- 9 0
Marguerites, per doz. bunches..	2 0- 2 6
Narcissus, Soliel d'or, per doz. bun.	4 0- 5 0
Orchids, per doz.:	
— Cattleya ..	9 0-10 0
— Cypripedium..	1 6- 2 0
— Odontoglossum crispum ..	2 0- 3 0
Pelargoniums, per doz. bunches, double scarlet	9 0-10 0
— White, per doz. bunches ..	10 0-12 0
Poinsettiss, per doz. blooms ..	9 0-12 0
Roses: per dozen blooms, Bride	2 0- 3 0
— Kaiserin Augusta Victoria	1 6- 3 0
— Lady Hillingdon	1 3- 1 6
— Liberty ..	4 0- 6 0
— Madame A. Chatenay ..	3 0- 8 0
— Melody ..	2 6- 4 0
— My Maryland..	1 6- 2 6
— Niphetos ..	2 0- 3 0
— Prince de Bulgarie	2 6- 3 6
— Richmond ..	4 0- 8 0
— Sunburst ..	3 0- 5 0
— White Crawford	3 0- 5 0
Spiraea, white, per doz. bunches..	8 0-10 0
Tuberoses, on stems, per doz. ..	0 9 —
— short, per doz.	0 5- 0 6
Violets, English, per doz. bunches ..	2 0- 2 6
— Princess of Wales, doz. bun.	3 6- 5 0
White Heather, per doz. bunches ..	4 0- 6 0

French Flowers.

	s.d. s.d.
Anemones, pink, per doz. bun...	1 9- 2 0
Mimosa, per bunch	0 10- 1 0
Narcissus, Paper White, per doz. bunches ...	2 6- 3 0
— Soleil d'Or ..	2 6- 3 0
Ranunculus, scarlet and orange ..	— —
Violets, single, per doz. bunches..	2 0- 2 6
— Parma, per large bunch ..	2 6- 3 0

Remarks.—Prices are expected to advance considerably between now (22nd inst.) and Christmas. Scarlet and white flowers are most in demand, including (scarlet) Pelargoniums (Geraniums), Carnations, Poinsettia, Tulips, and (white) Chrysanthemums, Carnations, Richardias (Arums), Lilium Harrissii, Tulips and Hyacinths. There is likely to be a shortage of Richardias, and it is expected that these flowers will realise high prices. Yellow Daffodils will be the most attractive of their colour, and their prices are expected to remain high. Business prospects are fairly good, but not equal to last season.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldii, dozen	4 0- 6 0
Araucaria excelsa, per dozen ..	18 0-21 0
Asparagus plumosus nanus, per dozen	10 0-12 0
— Sprengeri ..	6 0- 8 0
Aspidistra, per doz. green	18 0-30 0
— variegated ..	30 0-60 0
Azaleas, white and coloured, per dozen	36 0-42 0
Begonia Gloire de Lorraine, 48's, per dozen ..	10 0-12 0
Cacti, various, per tray of 15's ..	4 0 —
tray of 12's ..	5 0 —
Chrysanthemum, 48's, per dozen	6 0-12 0
Cocos Weddeliana, 48's, per doz. ..	18 0-30 0
— — 60's, per doz.	8 0-12 0
Croton, per dozen	18 0-30 6
Cyclamen, 48's, per doz.	9 0-12 0
Dracaena, green, per dozen ..	10 0-12 0
Erica, gracilis, thumbs, per doz.	3 0- 5 0
— — 48's, per doz.	8 0- 0 0

Plants in Pots, &c.: Average Wholesale Prices.—*Cont.*

	s. d. s. d.		s. d. s. d.
Erica h[illegible]lis, 48's, per [illegible] ..	8 0-10 0	Kentia Belmoreana, per dozen	5 0- 8 0
— — alba ..	10 0-12 0	— Forsteriana, 60's, per dozen	4 0- 8 0
— nivalis, 48's, per dozen ..	9 0-10 0	— — larger, per doz.	18 0-36 0
— — thumbs, per doz. ..	3 0- 5 0	Latania borbonica, per dozen ..	12 0-30 0
Ferns, in thumbs, per 100	8 0-12 0	Lilium lancifolium album, per doz.	— —
— in small and large 60's ..	12 0-20 0	— — rubrum, per dozen ..	— —
— in 48's, per dozen	5 0- 6 0	— longiflorum, per dozen	18 0-30 0
— choicer sorts, per dozen ..	8 0-12 0	Lily-of-the-Valley, 48's, per dozen	24 0-30 0
— in 32's, per doz.	10 0-18 0	Marguerites, in 48's, per doz., white	9 0-10 0
Geonoma gracilis, 60's, per dozen	6 0- 8 0	Phoenix rupicola, each	2 6-21 0
— larger, each ..	2 6- 7 6	Poinsettias, 48's, per doz. ..	9 0-10 0
Hyacinths, Roman, in flower, per dozen	2 0- 2 3	Tulips, in flower, per dozen ..	1 0- 1 3

REMARKS.—Prices in this department are not expected to vary so much as in the case of cut flowers. Tulips, Hyacinths and Daffodils are finding a ready sale at moderate prices.

Fruit: Average Wholesale Prices.

	s.d. s.d.		s. d. s. d.
Apples—		Grapes: *Continued*—	
— English, cooking, per bus. ..	4 0- 6 0	— English, Gros Colmar, per lb.	0 8- 1 9
— — dessert, per ½ bushel ..	3 0- 6 0	— Muscat of Alexandria ..	2 6- 4 0
— Nova Scotia, per brl. ..	15 0-24 0	— Canon Hall, per lb.	2 0- 5 0
— United States, per barrel ..	14 0-21 0	Lychees, per dz. lbs.	18 0-20 0
— Californian, per box ..	7 0- 7 6	Mandarins, per case	3 0-16 0
— Oregon, per box	9 0-11 0	Nuts, Almonds, per bag	60 0-65 0
Bananas, bunch:		— Brazils, pr. cwt.	44 0-56 0
— Medium ..	6 0 —	— Chestnuts, per bag	14 0-24 0
— X-medium ..	7 0 —	— Coconuts, per 100	16 0-20 0
— Extra	8 0 —	— Walnuts, dried, per cwt. ..	36 0-68 0
— Double X ..	9 0 —	Oranges, per case	5 6-22 0
— Giant	10 0-12 0	Pears, American, per barrel ..	18 0-22 0
— Red, per ton ..	£20 —	— Californian, per case ..	12 6-15 0
— Jamaica, p. ton	£12 —	— stewing, per bushel.. ..	6 0- 7 0
Cobnuts, per lb. ..	0 5- 0 5½		
Cranberries, per case	6 6-11 6		
Grapes: Alicante, per lb.	0 8- 2 0		
— Almeria, per barrel of 3 doz. lbs.	14 6-21 0		

Vegetables: Average Wholesale Prices

	s.d. s.d.		s.d. s.d.
Asparagus (Paris Green), per bun.	3 6- 3 9	Leeks, per dozen ..	1 6- 2 0
Beans, French, per lb.	1 4- 1 9	Lettuce, Cabbage and Cos, per doz.	2 6- 7 0
Beetroot, per bushel	2 6- 3 0	Mushrooms, cultivated, per lb...	0 10- 1 0
Brussels Sprouts, per ½ bus. ..	1 0- 1 3	— Buttons ..	0 10- 1 0
Cabbages, per tally	6 6- 8 0	Mustard and Cress, per dozen punnets	0 10- 1 0
Carrots, per cwt. ..	2 6- 3 0	Onions, per cwt. ..	10 0-12 0
Cauliflowers, per tally	9 0-12 0	Parsnips, per cwt.	3 0- 4 0
Celeriac, per doz...	1 6- 2 0	Peas, per lb. ..	1 0 —
Celery, per doz. bun.	7 0- 9 0	Potatos, new, per lb.	0 8 —
Chicory, Belgian, per lb.	0 6 —	Seakale, per doz. punnets ..	14 0-16 0
Cucumbers, per doz.	8 0-12 0	Spinach, per bus...	3 6- 4 0
Eschallots, per ½ sieve	2 0- 2 6	Tomatos, English, per doz. lbs. ..	5 0- 6 0
Garlic, per lb. ..	0 6- 0 7	— seconds ..	2 0- 4 0
Globe artichokes, per doz. ..	2 6- 4 0	— Teneriffe, per bundle.. ..	14 0-22 0
Herbs, per doz. bunches ..	2 0- 6 0	Turnip, English, per cwt.	2 6- 3 0
Horseradish, English, per bundle	2 6- 3 0	Turnip tops, p. bag	1 6- 2 0
		Watercress, p. doz.	0 6- 0 8

REMARKS.—There is nothing fresh to record beyond the fact that the Christmas trade is having a considerable influence on all departments.—*E. H. R., Covent Garden, December 21.*

Potatos.

	s. d. s. d.		s.d. s.d.
		Lincolns—	
Dunbars — Up-to-date.. ..	5 0- 5 3	Up-to-date ..	4 0- 4 3
Langworthy ..	5 3- 5 6	King Edward ..	4 0- 4 3
Kent	4 0- 4 3	British Queen ..	4 0- 4 3
		Evergood.. ..	3 6- 3 0
		Blackland ...	3 6- 3 6

Obituary.

WILLIAM BRADBURY LATHAM.— The death took place on the 17th inst. of Mr. W. B. Latham at 1, Green Hill, Leighton Buzzard, whither he removed from Rowington, near Warwick, about two years ago. Mr. Latham, who was born at Bicknare, near Maldon, in Essex, on February 13, 1835, commenced his gardening career at the age of thirteen in the garden of William McNeil, Esq., Wandsworth Common, an establishment noted for its extensive collection of hardy plants. It was here that Mr. Latham laid the foundation of his wide knowledge of this department of gardening. After spending three and a half years in the private garden, he was apprenticed to the late Robert Neal, of the Wandsworth Common Nurseries, at that time remarkable for hardy trees, shrubs, Roses, Alpine and hardy herbaceous plants. During this second engagement of three years, Mr. Latham took up the study of British botany, and at the same time became an enthusiastic collector of British plants. At the age of twenty he entered the Royal Gardens, Kew, where he remained for about two and a half years, during which time he was employed in the Palm, Heath, Orchid and stove houses. Always studious and painstaking, he compiled a list of all the plants in all the houses in which he was engaged during his two years' service at Kew. From Kew he went to the famous Chatsworth Gardens in 1857, at that time under the direction of the late Sir Joseph Paxton, but his stay in the Peak County was of rather short duration. His next move was to the Jardin des Plantes, Paris, where he saw for the first time the lovely bell-shaped, waxlike flowers of Lapageria alba, at that time the only specimen in Europe. Whilst at the Jardin des Plantes he also made the acquaintance of a flowering plant of the now familiar Paulownia imperialis. Many times did he refer to the low wages—two francs a day—paid to young gardeners at this establishment; but, as he used to say, he was prepared to make a financial sacrifice because of the special facilities given to young men to attend lectures. During his stay in Paris he visited numbers of gardens and nurseries, especially those devoted to fruit culture. After an absence of more than a year, he returned to England, and for six months was employed in the plant houses of Messrs. Parker and Williams's nursery at Holloway, whence he was appointed gardener to Lieut.-Col. Perkins, Birtley Hall, Chester-le-Street, Durham, in whose service he remained for eight years. The Birtley Hall gardens contained good collections of Orchids, Ferns, stove and greenhouse foliage and flowering plants. In 1868 Mr. Catlin retired from the curatorship of the Birmingham Botanic Gardens. Mr. Latham was appointed to the office—a position he held for thirty-five years. When he retired in September, 1903, the committee of the Society passed the following resolution :—"That this committee desire to place on record their high sense of the value of the services rendered to the Society by the curator of the gardens, Mr. W. B. Latham, during his thirty-five years of office, and, in accepting his resignation, hope for him many years of health in his well-earned retirement." It was further resolved that this expression of feeling should be engrossed and framed and presented to Mr. Latham. The committee also granted him a small pension. During his curatorship many improvements were carried out in the gardens, including the erection of the large range of greenhouses facing the great lawn in 1885 at a cost of £4,000, collected by subscriptions from the Society's friends; also the erection of the large Palm house, the extension to the exhibition hall, and the conversion of the old exhibition ground into a rock, water and bog garden. As a raiser of hybrid Orchids and Ferns Mr. Latham achieved some success. His name is perpetuated by Dicksonia Lathamii, a vigorous-growing, handsome tree-Fern, the history of which, as described by Mr. Latham, is as follows: Upwards of fifty years ago Mr. Latham had an imported specimen of Dicksonia arborescens, at that time a rare plant, with a stem 3-4 feet in height. Spores were collected from this plant and sown in a 5-inch pot, and in another pot spores of D. antarctica were sown at the same time. Both pots were placed near each other. As the seedlings of D. antarctica grew, two appeared to be different from the rest; they were carefully watched, and as they developed it became evident that they were distinct from both species named above. One of the original plants can still be seen in a flourishing condition in the Palm house at the Botanic Gardens, Birmingham. Other plants raised by Mr. Latham were Gymnogramme Lathamiae (G. decomposita × G. schizophylla), Cypripedium Lathamianum (C. Spicerianum × C. villosum), C. Edgbastonense (C. nitens × C. Chamberlainianum), and C. Deedmanianum (C. Spicerianum × C. Chamberlainianum). Mr. Latham possessed a good all-round knowledge of gardening, and his advice was much sought after in and around Birmingham, where he was held in high esteem by reason of his quiet, unassuming, kindly nature. About thirteen years ago he was awarded the Veitchian medal for distinguished work in horticulture. He was associated with several horticultural and allied societies in Birmingham. When the Birmingham Gardeners' Mutual Improvement Society was founded in 1886 he was appointed its first chairman, a position he held for many years with advantage to the Society and the good of the members generally. He was in turn chairman and treasurer of the Birmingham Chrysanthemum Society and for some years served on the committees of the Midland Daffodil and Midland Carnation Societies. His remains were laid to rest in the Leighton Buzzard cemetery on the 21st inst. Floral tributes were sent by the Birmingham Gardeners' Society, the Birmingham Chrysanthemum Society and other friends.

THE LATE WILLIAM BRADBURY LATHAM.

Answers to Correspondents

EDIBLE-PODDED PEAS: *Shropshire.* There is a race of edible-podded Peas known as Sugar Peas—Sans parchemin of the French. The pods are very fleshy and there is no hard membrane. Thus they can be eaten whole and are used in soups and stews. You can obtain seeds from the trade.

NAMES OF PLANTS: *G. F.* 1, Brunfelsia americana; 2, Ruellia spectabilis; 3, Silene longipetala; 4, Onosma montanum; 5, Cotoneaster vulgaris var.; 6, too scrappy to identify; 7, Dianthus multipunctatus; 8, Chenopodium capitatum; 9, Scorzonera crocifolia; 10, Trifolium purpureum.—*Fairholme.* Erica hyemalis.

WHITE FLY ON SHOW PELARGONIUMS: *Shropshire.* The fly may be destroyed by cyaniding the house at the rate of ¼oz. sodium cyanide, ¼oz. phosphoric acid, and 1oz. of water per 1,000 cubic feet contents. The phosphoric acid is less likely to scorch the foliage than sulphuric acid.

Communications Received.—B. D.—W. M. C.—W. W.—Miss P.—D. W.—C. R. B.—G. H. C.—F. M. B.—F. G. T.—F. G.—L. B.—P. C.—E. S.—W. B.—C. G. H.—J. W. Y.—R. J. W.—R. F. L.—H. E.—G. T.—W. F. R.—Miss L. M.—J. M.—C. F. L.—W. G. S.—H. J. C.—H. L.—H. R.—W. S.